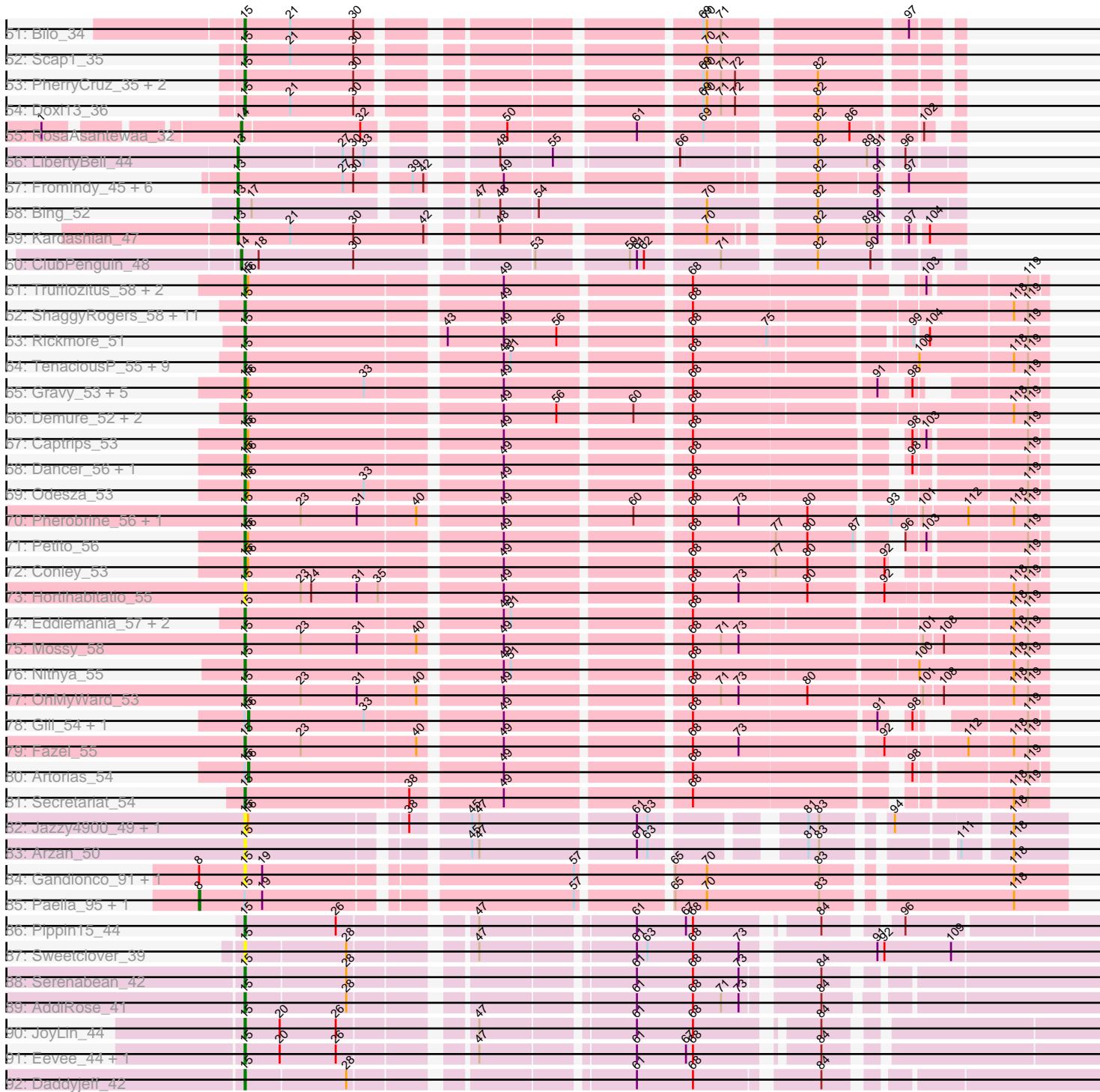


Pham 215846



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 215846 Report

This analysis was run 02/22/25 on database version 588.

Pham number 215846 has 207 members, 47 are drafts.

Phages represented in each track:

- Track 1 : Nason\_48, Arcadia\_48, Elsa\_48, Circum\_50
- Track 2 : Kardesai\_49, NapoleonB\_48, BenitoAntonio\_48, Cheesy\_48, Bowling\_47, Hankly\_47, Mooshroom\_50, Dynamite\_48
- Track 3 : KeaneyLin\_47, GoCrazy\_47
- Track 4 : Heisenberger\_47, Correa\_46, Mudcat\_45, JEGGS\_47
- Track 5 : Tribby\_48
- Track 6 : Xenomorph\_44
- Track 7 : Benllo\_49
- Track 8 : Inked\_48, Zippen\_46
- Track 9 : AreFloNak\_45, Nivinsha\_45
- Track 10 : Teacup\_45, Brunswick\_45
- Track 11 : DevitoJr\_43
- Track 12 : Niktson\_44, ElephantMan\_44, Tatanka\_43
- Track 13 : CapnMurica\_42, Tenno\_45, MiniBagel\_44
- Track 14 : Acai\_46
- Track 15 : Synopsis\_43
- Track 16 : ScienceWizSam\_45
- Track 17 : Issa\_46
- Track 18 : Nightmare\_46
- Track 19 : CastorTray\_47
- Track 20 : Darby\_43, Breylor17\_45
- Track 21 : LucySwiss\_46
- Track 22 : Trustiboi\_44
- Track 23 : Gordon\_42
- Track 24 : Chlochlo\_44, Bouchard\_44, LilHuddy\_46, Phaby\_46
- Track 25 : Giantsbane\_46
- Track 26 : Shepard\_48
- Track 27 : Tokki\_48
- Track 28 : Loretta\_46, Ingrid\_46
- Track 29 : Caterpillar\_41
- Track 30 : Makai\_44, Truckee\_42
- Track 31 : Leathea\_47
- Track 32 : Biscute\_50, Renaldo\_52
- Track 33 : Phaila\_49
- Track 34 : Navi1117\_50
- Track 35 : Argan\_46

- Track 36 : Uzumaki\_45, Tenney120\_49, GantcherGoblin\_46, KevinMinion\_48, Zeina\_48
- Track 37 : BarbieDoll\_51, Kinny\_51, Lewando\_49
- Track 38 : TrixiePhattel\_48
- Track 39 : ProfFrink\_43, Sloopyjoe\_43, Linda\_43, Michelle\_43, Stayer\_43, Djungelskog\_43, Egad\_43, Raunak\_46, Boog\_44, BronxBay\_43, StarLord\_43, HerbBucket\_43, Shiba\_42, MrAaronian\_43, DoctorPepper\_42, Salk\_43
- Track 40 : RustyBoy\_43
- Track 41 : Natasha\_43
- Track 42 : PowellDog\_48
- Track 43 : Sporto\_44
- Track 44 : Hoshi\_48, Namo\_50, Indigenous\_49, Esketit\_49, FidgetOrca\_49, Maya\_49, Rima\_50, OlympicHelado\_49, Spectropatronm\_49, TonyStarch\_48, Meibysrarus\_47, Jaylociraptor\_49, TieDye\_48
- Track 45 : IceWarrior\_48, CherryBlossom\_49, TaidaOne\_49
- Track 46 : GirlPower\_44
- Track 47 : Popy\_49, FrodoSwaggins\_49, DrGrey\_48
- Track 48 : HazuAndZazu\_48, Soshi\_48
- Track 49 : Madamoto\_50
- Track 50 : Moozy\_35, HotFries\_35, SheRa\_36, Annihilus\_36
- Track 51 : Bilo\_34
- Track 52 : Scap1\_35
- Track 53 : PherryCruz\_35, GoblinVoyage\_36, RavenPuff\_35
- Track 54 : Doxi13\_36
- Track 55 : RosaAsantewaa\_32
- Track 56 : LibertyBell\_44
- Track 57 : FromIndy\_45, Miek\_44, Regigigas\_46, Rainydai\_44, CricKo\_45, Thiqqums\_45, SendItCS\_43
- Track 58 : Bing\_52
- Track 59 : Kardashian\_47
- Track 60 : ClubPenguin\_48
- Track 61 : Trufflozitus\_58, JulesRay\_56, Avazak\_55
- Track 62 : ShaggyRogers\_58, Gusicorn\_57, Hydrus\_57, Nadmeg\_56, Madvan\_55, Phepper\_56, Burley\_55, BetterYeti\_57, Untouchable\_56, Runhaar\_55, Vardy\_54, Crocheter\_55
- Track 63 : Rickmore\_51
- Track 64 : TenaciousP\_55, Duffington\_53, Chikenjars\_53, EndAve\_56, Citrus\_55, AlainaMarie\_54, OlgasClover\_56, Aflac\_54, Figliar\_53, Jodelie19\_54
- Track 65 : Gravy\_53, Roney\_54, Tanis\_54, Capybara\_54, NoPickles\_53, Kerry\_53
- Track 66 : Demure\_52, Arataki\_51, Zeph\_57
- Track 67 : Captrips\_53
- Track 68 : Dancer\_56, FortCran\_54
- Track 69 : Odesza\_53
- Track 70 : Pherobrine\_56, Mysticmoon\_56
- Track 71 : Petite\_56
- Track 72 : Conley\_53
- Track 73 : Hortihabitatio\_55
- Track 74 : Eddiemania\_57, Kenosha\_54, MajinBuu\_55
- Track 75 : Mossy\_58
- Track 76 : Nithya\_55
- Track 77 : OhMyWard\_53
- Track 78 : Gill\_54, Magel\_55
- Track 79 : Fazel\_55

- Track 80 : Artorias\_54
- Track 81 : Secretariat\_54
- Track 82 : Jazzy4900\_49, Sunny4976\_48
- Track 83 : Arzan\_50
- Track 84 : Gandionco\_91, Elver\_93
- Track 85 : Paella\_95, Qui\_95
- Track 86 : Pippin15\_44
- Track 87 : Sweetclover\_39
- Track 88 : Serenabean\_42
- Track 89 : AddiRose\_41
- Track 90 : JoyLin\_44
- Track 91 : Eevee\_44, Yotsuba\_44
- Track 92 : Daddyjeff\_42

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

The start number called the most often in the published annotations is 15, it was called in 122 of the 160 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acai\_46, AddiRose\_41, Aflac\_54, AlainaMarie\_54, Annihilus\_36, Arataki\_51, Arcadia\_48, AreFloNak\_45, Argan\_46, Arzan\_50, Avazak\_55, BarbieDoll\_51, BenitoAntonio\_48, Benllo\_49, BetterYeti\_57, Bilo\_34, Biscute\_50, Boog\_44, Bouchard\_44, Bowling\_47, Breylor17\_45, BronxBay\_43, Brunswick\_45, Burley\_55, CapnMurica\_42, Captrips\_53, Copybara\_54, CastorTray\_47, Caterpillar\_41, Cheesy\_48, Chikenjars\_53, Chlochlo\_44, Circum\_50, Citrus\_55, Conley\_53, Correa\_46, Crocheter\_55, Daddyjeff\_42, Dancer\_56, Darby\_43, Demure\_52, DevitoJr\_43, Djungelskog\_43, DoctorPepper\_42, Doxi13\_36, Duffington\_53, Dynamite\_48, Eddiemania\_57, Eevee\_44, Egad\_43, ElephantMan\_44, Elsa\_48, Elver\_93, EndAve\_56, Fazel\_55, Figliar\_53, FortCran\_54, Gandionco\_91, GantcherGoblin\_46, Giantsbane\_46, GoCrazy\_47, GoblinVoyage\_36, Gordon\_42, Gravy\_53, Gusicorn\_57, Hankly\_47, Heisenberger\_47, HerbBucket\_43, Hortihabitatio\_55, HotFries\_35, Hydrus\_57, Ingrid\_46, Inked\_48, Issa\_46, JEGGS\_47, Jazzy4900\_49, Jodelie19\_54, JoyLin\_44, JulesRay\_56, Kardesai\_49, KeaneyLin\_47, Kenosha\_54, Kerry\_53, KevinMinion\_48, Kinny\_51, Leathea\_47, Lewando\_49, LilHuddy\_46, Linda\_43, Loretta\_46, LucySwiss\_46, Madvan\_55, MajinBuu\_55, Makai\_44, Michelle\_43, MiniBagel\_44, Mooshroom\_50, Moozy\_35, Mossy\_58, MrAaronian\_43, Mudcat\_45, Mysticmoon\_56, Nadmeg\_56, NapoleonB\_48, Nason\_48, Natasha\_43, Navi1117\_50, Nightmare\_46, Niktson\_44, Nithya\_55, Nivinsha\_45, NoPickles\_53, Odesza\_53, OhMyWard\_53, OlgasClover\_56, Petite\_56, Phaby\_46, Phaila\_49, Phepper\_56, Pherobrine\_56, PherryCruz\_35, Pippin15\_44, PowellDog\_48, ProfFrink\_43, Raunak\_46, RavenPuff\_35, Renaldo\_52, Rickmore\_51, Roney\_54, Runhaar\_55, RustyBoy\_43, Salk\_43, Scap1\_35, ScienceWizSam\_45, Secretariat\_54, Serenabean\_42, ShaggyRogers\_58, SheRa\_36, Shepard\_48, Shiba\_42, Sloopyjoe\_43, Sporto\_44, StarLord\_43, Stayer\_43, Sunny4976\_48, Sweetclover\_39, Synopsis\_43, Tanis\_54, Tatanka\_43, Teacup\_45, TenaciousP\_55, Tenney120\_49, Tenno\_45, Tokki\_48, Tribby\_48, TrixiePhattel\_48, Truckee\_42, Trufflozitus\_58, Trustiboi\_44, Untouchable\_56, Uzumaki\_45, Vardy\_54, Xenomorph\_44, Yotsuba\_44, Zeina\_48, Zeph\_57, Zippen\_46,

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

- Artorias\_54, Gill\_54, Magel\_55, Paella\_95, Qui\_95,

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

- Bing\_52, CherryBlossom\_49, ClubPenguin\_48, CricKo\_45, DrGrey\_48, Esketit\_49, FidgetOrca\_49, FrodoSwaggins\_49, FromIndy\_45, GirlPower\_44, HazuAndZazu\_48, Hoshi\_48, IceWarrior\_48, Indigenous\_49, Jaylociraptor\_49, Kardashian\_47, LibertyBell\_44, Madamoto\_50, Maya\_49, Meibysrarus\_47, Miek\_44, Namu\_50, OlympicHelado\_49, Popy\_49, Rainydai\_44, Regigigas\_46, Rima\_50, RosaAsantewaa\_32, SendItCS\_43, Soshi\_48, Spectropatronm\_49, TaidaOne\_49, Thiqqums\_45, TieDye\_48, TonyStarch\_48,

### Summary by start number:

Start 8:

- Found in 8 of 207 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 2 of 160
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Paella\_95 (FK), Qui\_95 (FK),

Start 13:

- Found in 10 of 207 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 8 of 160
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bing\_52 (BI5), CricKo\_45 (BI4), FromIndy\_45 (BI4), Kardashian\_47 (BI6), LibertyBell\_44 (BI3), Miek\_44 (BI4), Rainydai\_44 (BI4), Regigigas\_46 (BI4), SendItCS\_43 (BI4), Thiqqums\_45 (BI4),

Start 14:

- Found in 25 of 207 ( 12.1% ) of genes in pham
- Manual Annotations of this start: 25 of 160
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CherryBlossom\_49 (BI1), ClubPenguin\_48 (BI7), DrGrey\_48 (BI1), Esketit\_49 (BI1), FidgetOrca\_49 (BI1), FrodoSwaggins\_49 (BI1), GirlPower\_44 (BI1), HazuAndZazu\_48 (BI1), Hoshi\_48 (BI1), IceWarrior\_48 (BI1), Indigenous\_49 (BI1), Jaylociraptor\_49 (BI1), Madamoto\_50 (BI1), Maya\_49 (BI1), Meibysrarus\_47 (BI1), Namu\_50 (BI1), OlympicHelado\_49 (BI1), Popy\_49 (BI1), Rima\_50 (BI1), RosaAsantewaa\_32 (BI2), Soshi\_48 (BI1), Spectropatronm\_49 (BI1), TaidaOne\_49 (BI1), TieDye\_48 (BI1), TonyStarch\_48 (BI1),

Start 15:

- Found in 172 of 207 ( 83.1% ) of genes in pham
- Manual Annotations of this start: 122 of 160
- Called 97.1% of time when present
- Phage (with cluster) where this start called: Acai\_46 (AU1), AddiRose\_41 (JA), Aflac\_54 (DJ), AlainaMarie\_54 (DJ), Annihilus\_36 (BI2), Arataki\_51 (DJ), Arcadia\_48 (AM), AreFloNak\_45 (AU1), Argan\_46 (AU6), Arzan\_50 (FI), Avazak\_55 (DJ), BarbieDoll\_51 (AU6), BenitoAntonio\_48 (AM), Benllo\_49 (AM), BetterYeti\_57 (DJ), Bilo\_34 (BI2), Biscute\_50 (AU6), Boog\_44 (AW), Bouchard\_44 (AU2), Bowling\_47 (AM), Breylor17\_45 (AU1), BronxBay\_43 (AW), Brunswick\_45 (AU1), Burley\_55 (DJ), CapnMurica\_42 (AU1), Captrips\_53 (DJ), Copybara\_54 (DJ), CastorTray\_47 (AU1),

Caterpillar\_41 (AU4), Cheesy\_48 (AM), Chikenjars\_53 (DJ), Chlochlo\_44 (AU2), Circum\_50 (AM), Citrus\_55 (DJ), Conley\_53 (DJ), Correa\_46 (AM), Crocheter\_55 (DJ), Daddyjeff\_42 (JA), Dancer\_56 (DJ), Darby\_43 (AU1), Demure\_52 (DJ), DevitoJr\_43 (AU1), Djungelskog\_43 (AW), DoctorPepper\_42 (AW), Doxi13\_36 (BI2), Duffington\_53 (DJ), Dynamite\_48 (AM), Eddiemania\_57 (DJ), Eevee\_44 (JA), Egad\_43 (AW), ElephantMan\_44 (AU1), Elsa\_48 (AM), Elver\_93 (FK), EndAve\_56 (DJ), Fazel\_55 (DJ), Figliar\_53 (DJ), FortCran\_54 (DJ), Gandionco\_91 (FK), GantcherGoblin\_46 (AU6), Giantsbane\_46 (AU2), GoCrazy\_47 (AM), GoblinVoyage\_36 (BI2), Gordon\_42 (AU1), Gravy\_53 (DJ), Gusicorn\_57 (DJ), Hankly\_47 (AM), Heisenberger\_47 (AM), HerbBucket\_43 (AW), Hortihabitatio\_55 (DJ), HotFries\_35 (BI2), Hydrus\_57 (DJ), Ingrid\_46 (AU3), Inked\_48 (AU), Issa\_46 (AU1), JEGGS\_47 (AM), Jazzy4900\_49 (FI), Jodelie19\_54 (DJ), JoyLin\_44 (JA), JulesRay\_56 (DJ), Kardesai\_49 (AM), KeaneyLin\_47 (AM), Kenosha\_54 (DJ), Kerry\_53 (DJ), KevinMinion\_48 (AU6), Kinny\_51 (AU6), Leathea\_47 (AU6), Lewando\_49 (AU6), LilHuddy\_46 (AU2), Linda\_43 (AW), Loretta\_46 (AU3), LucySwiss\_46 (AU1), Madvan\_55 (DJ), MajinBuu\_55 (DJ), Makai\_44 (AU5), Michelle\_43 (AW), MiniBagel\_44 (AU1), Mooshroom\_50 (AM), Moozy\_35 (BI2), Mossy\_58 (DJ), MrAaronian\_43 (AW), Mudcat\_45 (AM), Mysticmoon\_56 (DJ), Nadmeg\_56 (DJ), NapoleonB\_48 (AM), Nason\_48 (AM), Natasha\_43 (AW), Navi1117\_50 (AU6), Nightmare\_46 (AU1), Niktson\_44 (AU1), Nithya\_55 (DJ), Nivinsha\_45 (AU1), NoPickles\_53 (DJ), Odesza\_53 (DJ), OhMyWard\_53 (DJ), OlgasClover\_56 (DJ), Petito\_56 (DJ), Phaby\_46 (AU2), Phaila\_49 (AU6), Phepper\_56 (DJ), Pherobrine\_56 (DJ), PherryCruz\_35 (BI2), Pippin15\_44 (JA), PowellDog\_48 (AW), ProfFrink\_43 (AW), Raunak\_46 (AW), RavenPuff\_35 (BI2), Renaldo\_52 (AU6), Rickmore\_51 (DJ), Roney\_54 (DJ), Runhaar\_55 (DJ), RustyBoy\_43 (AW), Salk\_43 (AW), Scap1\_35 (BI2), ScienceWizSam\_45 (AU1), Secretariat\_54 (DJ), Serenabean\_42 (JA), ShaggyRogers\_58 (DJ), SheRa\_36 (BI2), Shepard\_48 (AU2), Shiba\_42 (AW), Sloopyjoe\_43 (AW), Sporto\_44 (AW), StarLord\_43 (AW), Stayer\_43 (AW), Sunny4976\_48 (FI), Sweetclover\_39 (JA), Synopsis\_43 (AU1), Tanis\_54 (DJ), Tatanka\_43 (AU1), Teacup\_45 (AU1), TenaciousP\_55 (DJ), Tenney120\_49 (AU6), Tenno\_45 (AU1), Tokki\_48 (AU2), Tribby\_48 (AM), TrixiePhattel\_48 (AU6), Truckee\_42 (AU5), Trufflozitus\_58 (DJ), Trustiboi\_44 (AU1), Untouchable\_56 (DJ), Uzumaki\_45 (AU6), Vardy\_54 (DJ), Xenomorph\_44 (AM), Yotsuba\_44 (JA), Zeina\_48 (AU6), Zeph\_57 (DJ), Zippen\_46 (AU3),

Start 16:

- Found in 20 of 207 ( 9.7% ) of genes in pham
- Manual Annotations of this start: 3 of 160
- Called 15.0% of time when present
- Phage (with cluster) where this start called: Artorias\_54 (DJ), Gill\_54 (DJ), Magel\_55 (DJ),

### Summary by clusters:

There are 20 clusters represented in this pham: AU, FK, DJ, FI, AM, BI3, AU1, AU3, AU2, AU5, AU4, AW, AU6, BI6, BI7, BI4, BI5, BI2, JA, BI1,

Info for manual annotations of cluster AM:

- Start number 15 was manually annotated 19 times for cluster AM.

Info for manual annotations of cluster AU:

- Start number 15 was manually annotated 1 time for cluster AU.

Info for manual annotations of cluster AU1:

- Start number 15 was manually annotated 17 times for cluster AU1.

Info for manual annotations of cluster AU2:

- Start number 15 was manually annotated 5 times for cluster AU2.

Info for manual annotations of cluster AU3:

- Start number 15 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 15 was manually annotated 1 time for cluster AU4.

Info for manual annotations of cluster AU5:

- Start number 15 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:

- Start number 15 was manually annotated 5 times for cluster AU6.

Info for manual annotations of cluster AW:

- Start number 15 was manually annotated 14 times for cluster AW.

Info for manual annotations of cluster BI1:

- Start number 14 was manually annotated 23 times for cluster BI1.

Info for manual annotations of cluster BI2:

- Start number 14 was manually annotated 1 time for cluster BI2.
- Start number 15 was manually annotated 10 times for cluster BI2.

Info for manual annotations of cluster BI3:

- Start number 13 was manually annotated 1 time for cluster BI3.

Info for manual annotations of cluster BI4:

- Start number 13 was manually annotated 5 times for cluster BI4.

Info for manual annotations of cluster BI5:

- Start number 13 was manually annotated 1 time for cluster BI5.

Info for manual annotations of cluster BI6:

- Start number 13 was manually annotated 1 time for cluster BI6.

Info for manual annotations of cluster BI7:

- Start number 14 was manually annotated 1 time for cluster BI7.

Info for manual annotations of cluster DJ:

- Start number 15 was manually annotated 39 times for cluster DJ.
- Start number 16 was manually annotated 3 times for cluster DJ.

Info for manual annotations of cluster FK:

- Start number 8 was manually annotated 2 times for cluster FK.

Info for manual annotations of cluster JA:



- Start number 15 was manually annotated 7 times for cluster JA.

**Gene Information:**

Gene: Acai\_46 Start: 33525, Stop: 34184, Start Num: 15

Candidate Starts for Acai\_46:

(Start: 15 @33525 has 122 MA's), (25, 33594), (30, 33618), (62, 33837), (80, 33960), (120, 34146),

Gene: AddiRose\_41 Start: 30292, Stop: 30936, Start Num: 15

Candidate Starts for AddiRose\_41:

(Start: 15 @30292 has 122 MA's), (28, 30376), (61, 30583), (68, 30631), (71, 30655), (73, 30670), (84, 30724),

Gene: Aflac\_54 Start: 37624, Stop: 38262, Start Num: 15

Candidate Starts for Aflac\_54:

(Start: 15 @37624 has 122 MA's), (49, 37831), (51, 37837), (68, 37975), (100, 38155), (118, 38233), (119, 38245),

Gene: AlainaMarie\_54 Start: 37610, Stop: 38248, Start Num: 15

Candidate Starts for AlainaMarie\_54:

(Start: 15 @37610 has 122 MA's), (49, 37817), (51, 37823), (68, 37961), (100, 38141), (118, 38219), (119, 38231),

Gene: Annihilus\_36 Start: 26356, Stop: 26877, Start Num: 15

Candidate Starts for Annihilus\_36:

(Start: 15 @26356 has 122 MA's), (30, 26449), (69, 26692), (70, 26695), (71, 26707), (72, 26719), (97, 26845),

Gene: Arataki\_51 Start: 36745, Stop: 37380, Start Num: 15

Candidate Starts for Arataki\_51:

(Start: 15 @36745 has 122 MA's), (49, 36952), (56, 36997), (60, 37054), (68, 37096), (118, 37351), (119, 37363),

Gene: Arcadia\_48 Start: 31859, Stop: 32455, Start Num: 15

Candidate Starts for Arcadia\_48:

(Start: 15 @31859 has 122 MA's), (44, 32048), (48, 32075), (59, 32174), (69, 32228), (71, 32243), (117, 32447),

Gene: AreFloNak\_45 Start: 33292, Stop: 33951, Start Num: 15

Candidate Starts for AreFloNak\_45:

(Start: 8 @33253 has 2 MA's), (12, 33268), (Start: 15 @33292 has 122 MA's), (25, 33361), (30, 33385), (46, 33469), (49, 33493), (111, 33847),

Gene: Argan\_46 Start: 32018, Stop: 32551, Start Num: 15

Candidate Starts for Argan\_46:

(Start: 15 @32018 has 122 MA's), (36, 32132), (41, 32159), (47, 32189), (68, 32351), (71, 32375), (88, 32471), (106, 32513), (111, 32531),

Gene: Artorias\_54 Start: 36960, Stop: 37574, Start Num: 16

Candidate Starts for Artorias\_54:

(Start: 15 @36957 has 122 MA's), (Start: 16 @36960 has 3 MA's), (49, 37164), (68, 37308), (98, 37473), (119, 37560),

Gene: Arzan\_50 Start: 33168, Stop: 33752, Start Num: 15

Candidate Starts for Arzan\_50:

(Start: 15 @33168 has 122 MA's), (45, 33333), (47, 33339), (61, 33465), (63, 33474), (81, 33576), (83, 33585), (111, 33672), (118, 33708),

Gene: Avazak\_55 Start: 37284, Stop: 37901, Start Num: 15

Candidate Starts for Avazak\_55:

(Start: 15 @37284 has 122 MA's), (Start: 16 @37287 has 3 MA's), (49, 37491), (68, 37635), (103, 37809), (119, 37887),

Gene: BarbieDoll\_51 Start: 33705, Stop: 34238, Start Num: 15

Candidate Starts for BarbieDoll\_51:

(Start: 15 @33705 has 122 MA's), (36, 33819), (41, 33846), (47, 33876), (68, 34038), (71, 34062), (106, 34200), (111, 34218),

Gene: BenitoAntonio\_48 Start: 31423, Stop: 31992, Start Num: 15

Candidate Starts for BenitoAntonio\_48:

(Start: 15 @31423 has 122 MA's), (44, 31612), (48, 31639), (58, 31714), (59, 31738), (69, 31792),

Gene: Benllo\_49 Start: 32107, Stop: 32676, Start Num: 15

Candidate Starts for Benllo\_49:

(Start: 15 @32107 has 122 MA's), (44, 32296), (48, 32323), (58, 32398), (59, 32422), (69, 32476), (71, 32491),

Gene: BetterYeti\_57 Start: 37708, Stop: 38343, Start Num: 15

Candidate Starts for BetterYeti\_57:

(Start: 15 @37708 has 122 MA's), (49, 37915), (68, 38059), (118, 38314), (119, 38326),

Gene: Bilo\_34 Start: 26468, Stop: 26989, Start Num: 15

Candidate Starts for Bilo\_34:

(Start: 15 @26468 has 122 MA's), (21, 26507), (30, 26561), (69, 26804), (70, 26807), (71, 26819), (97, 26957),

Gene: Bing\_52 Start: 33497, Stop: 34048, Start Num: 13

Candidate Starts for Bing\_52:

(Start: 13 @33497 has 8 MA's), (17, 33509), (47, 33671), (48, 33689), (54, 33719), (70, 33854), (82, 33935), (91, 33986),

Gene: Biscute\_50 Start: 33357, Stop: 33890, Start Num: 15

Candidate Starts for Biscute\_50:

(Start: 15 @33357 has 122 MA's), (36, 33471), (41, 33498), (47, 33528), (68, 33690), (71, 33714), (106, 33852),

Gene: Boog\_44 Start: 30697, Stop: 31257, Start Num: 15

Candidate Starts for Boog\_44:

(Start: 15 @30697 has 122 MA's), (28, 30784), (33, 30796), (37, 30826), (43, 30850), (55, 30940), (79, 31099),

Gene: Bouchard\_44 Start: 33214, Stop: 33864, Start Num: 15

Candidate Starts for Bouchard\_44:

(Start: 15 @33214 has 122 MA's), (25, 33283), (30, 33307),

Gene: Bowling\_47 Start: 31632, Stop: 32201, Start Num: 15

Candidate Starts for Bowling\_47:

(Start: 15 @31632 has 122 MA's), (44, 31821), (48, 31848), (58, 31923), (59, 31947), (69, 32001),

Gene: Breylor17\_45 Start: 34090, Stop: 34749, Start Num: 15

Candidate Starts for Breylor17\_45:

(Start: 15 @34090 has 122 MA's), (25, 34159), (30, 34183), (46, 34267), (49, 34291), (80, 34525), (111, 34645), (113, 34657), (116, 34678),

Gene: BronxBay\_43 Start: 30995, Stop: 31555, Start Num: 15

Candidate Starts for BronxBay\_43:

(Start: 15 @30995 has 122 MA's), (28, 31082), (33, 31094), (37, 31124), (43, 31148), (55, 31238), (79, 31397),

Gene: Brunswick\_45 Start: 33172, Stop: 33831, Start Num: 15

Candidate Starts for Brunswick\_45:

(Start: 15 @33172 has 122 MA's), (25, 33241), (30, 33265), (71, 33541), (80, 33607), (120, 33793),

Gene: Burley\_55 Start: 37396, Stop: 38031, Start Num: 15

Candidate Starts for Burley\_55:

(Start: 15 @37396 has 122 MA's), (49, 37603), (68, 37747), (118, 38002), (119, 38014),

Gene: CapnMurica\_42 Start: 34070, Stop: 34729, Start Num: 15

Candidate Starts for CapnMurica\_42:

(Start: 15 @34070 has 122 MA's), (25, 34139), (30, 34163), (71, 34439), (120, 34691),

Gene: Captrips\_53 Start: 36432, Stop: 37049, Start Num: 15

Candidate Starts for Captrips\_53:

(Start: 15 @36432 has 122 MA's), (Start: 16 @36435 has 3 MA's), (49, 36639), (68, 36783), (98, 36948), (103, 36957), (119, 37035),

Gene: Capybara\_54 Start: 36783, Stop: 37382, Start Num: 15

Candidate Starts for Capybara\_54:

(Start: 15 @36783 has 122 MA's), (Start: 16 @36786 has 3 MA's), (33, 36885), (49, 36990), (68, 37134), (91, 37284), (98, 37299), (119, 37368),

Gene: CastorTray\_47 Start: 33900, Stop: 34559, Start Num: 15

Candidate Starts for CastorTray\_47:

(Start: 15 @33900 has 122 MA's), (25, 33969), (30, 33993), (46, 34077), (49, 34101), (111, 34455),

Gene: Caterpillar\_41 Start: 32360, Stop: 33028, Start Num: 15

Candidate Starts for Caterpillar\_41:

(9, 32324), (Start: 15 @32360 has 122 MA's), (25, 32429), (30, 32453), (120, 32990), (122, 33023),

Gene: Cheesy\_48 Start: 31608, Stop: 32177, Start Num: 15

Candidate Starts for Cheesy\_48:

(Start: 15 @31608 has 122 MA's), (44, 31797), (48, 31824), (58, 31899), (59, 31923), (69, 31977),

Gene: CherryBlossom\_49 Start: 32728, Stop: 33255, Start Num: 14

Candidate Starts for CherryBlossom\_49:

(2, 32665), (Start: 14 @32728 has 25 MA's), (27, 32815), (30, 32824), (34, 32839), (46, 32896), (48, 32917), (64, 33034), (70, 33070), (82, 33148), (97, 33214), (102, 33223), (107, 33238),

Gene: Chikenjars\_53 Start: 37622, Stop: 38260, Start Num: 15

Candidate Starts for Chikenjars\_53:

(Start: 15 @37622 has 122 MA's), (49, 37829), (51, 37835), (68, 37973), (100, 38153), (118, 38231), (119, 38243),

Gene: Chlochlo\_44 Start: 33279, Stop: 33929, Start Num: 15

Candidate Starts for Chlochlo\_44:

(Start: 15 @33279 has 122 MA's), (25, 33348), (30, 33372),

Gene: Circum\_50 Start: 32270, Stop: 32866, Start Num: 15

Candidate Starts for Circum\_50:

(Start: 15 @32270 has 122 MA's), (44, 32459), (48, 32486), (59, 32585), (69, 32639), (71, 32654), (117, 32858),

Gene: Citrus\_55 Start: 37900, Stop: 38538, Start Num: 15

Candidate Starts for Citrus\_55:

(Start: 15 @37900 has 122 MA's), (49, 38107), (51, 38113), (68, 38251), (100, 38431), (118, 38509), (119, 38521),

Gene: ClubPenguin\_48 Start: 32048, Stop: 32584, Start Num: 14

Candidate Starts for ClubPenguin\_48:

(Start: 14 @32048 has 25 MA's), (18, 32063), (30, 32144), (53, 32276), (59, 32345), (61, 32351), (62, 32357), (71, 32414), (82, 32483), (90, 32528),

Gene: Conley\_53 Start: 37570, Stop: 38184, Start Num: 15

Candidate Starts for Conley\_53:

(Start: 15 @37570 has 122 MA's), (Start: 16 @37573 has 3 MA's), (49, 37777), (68, 37921), (77, 37990), (80, 38017), (92, 38074), (119, 38170),

Gene: Correa\_46 Start: 30727, Stop: 31323, Start Num: 15

Candidate Starts for Correa\_46:

(Start: 15 @30727 has 122 MA's), (44, 30916), (48, 30943), (58, 31018), (59, 31042), (69, 31096), (71, 31111), (117, 31315),

Gene: CricKo\_45 Start: 30767, Stop: 31297, Start Num: 13

Candidate Starts for CricKo\_45:

(Start: 13 @30767 has 8 MA's), (27, 30857), (30, 30866), (39, 30905), (42, 30914), (49, 30962), (82, 31184), (91, 31232), (97, 31250),

Gene: Crocheter\_55 Start: 37792, Stop: 38427, Start Num: 15

Candidate Starts for Crocheter\_55:

(Start: 15 @37792 has 122 MA's), (49, 37999), (68, 38143), (118, 38398), (119, 38410),

Gene: Daddyjeff\_42 Start: 30571, Stop: 31212, Start Num: 15

Candidate Starts for Daddyjeff\_42:

(Start: 15 @30571 has 122 MA's), (28, 30655), (61, 30862), (68, 30910), (84, 31003),

Gene: Dancer\_56 Start: 36692, Stop: 37309, Start Num: 15

Candidate Starts for Dancer\_56:

(Start: 15 @36692 has 122 MA's), (Start: 16 @36695 has 3 MA's), (49, 36899), (68, 37043), (98, 37208), (119, 37295),

Gene: Darby\_43 Start: 33072, Stop: 33731, Start Num: 15

Candidate Starts for Darby\_43:

(Start: 15 @33072 has 122 MA's), (25, 33141), (30, 33165), (46, 33249), (49, 33273), (80, 33507), (111, 33627), (113, 33639), (116, 33660),

Gene: Demure\_52 Start: 36745, Stop: 37380, Start Num: 15

Candidate Starts for Demure\_52:

(Start: 15 @36745 has 122 MA's), (49, 36952), (56, 36997), (60, 37054), (68, 37096), (118, 37351), (119, 37363),

Gene: DevitoJr\_43 Start: 33260, Stop: 33919, Start Num: 15

Candidate Starts for DevitoJr\_43:

(Start: 15 @33260 has 122 MA's), (25, 33329), (30, 33353), (46, 33437), (111, 33815), (116, 33848),

Gene: Djungelskog\_43 Start: 30994, Stop: 31554, Start Num: 15

Candidate Starts for Djungelskog\_43:

(Start: 15 @30994 has 122 MA's), (28, 31081), (33, 31093), (37, 31123), (43, 31147), (55, 31237), (79, 31396),

Gene: DoctorPepper\_42 Start: 30699, Stop: 31259, Start Num: 15

Candidate Starts for DoctorPepper\_42:

(Start: 15 @30699 has 122 MA's), (28, 30786), (33, 30798), (37, 30828), (43, 30852), (55, 30942), (79, 31101),

Gene: Doxi13\_36 Start: 26330, Stop: 26851, Start Num: 15

Candidate Starts for Doxi13\_36:

(Start: 15 @26330 has 122 MA's), (21, 26369), (30, 26423), (69, 26666), (70, 26669), (71, 26681), (72, 26693), (82, 26750),

Gene: DrGrey\_48 Start: 33096, Stop: 33620, Start Num: 14

Candidate Starts for DrGrey\_48:

(Start: 14 @33096 has 25 MA's), (27, 33183), (30, 33192), (34, 33207), (46, 33264), (48, 33285), (64, 33402), (70, 33438), (82, 33516), (85, 33534), (90, 33558), (97, 33582), (102, 33591),

Gene: Duffington\_53 Start: 37317, Stop: 37955, Start Num: 15

Candidate Starts for Duffington\_53:

(Start: 15 @37317 has 122 MA's), (49, 37524), (51, 37530), (68, 37668), (100, 37848), (118, 37926), (119, 37938),

Gene: Dynamite\_48 Start: 31823, Stop: 32392, Start Num: 15

Candidate Starts for Dynamite\_48:

(Start: 15 @31823 has 122 MA's), (44, 32012), (48, 32039), (58, 32114), (59, 32138), (69, 32192),

Gene: Eddiemania\_57 Start: 38537, Stop: 39172, Start Num: 15

Candidate Starts for Eddiemania\_57:

(Start: 15 @38537 has 122 MA's), (49, 38744), (51, 38750), (68, 38888), (118, 39143), (119, 39155),

Gene: Eevee\_44 Start: 33674, Stop: 34315, Start Num: 15

Candidate Starts for Eevee\_44:

(Start: 15 @33674 has 122 MA's), (20, 33704), (26, 33752), (47, 33848), (61, 33968), (67, 34010), (68, 34016), (84, 34103),

Gene: Egad\_43 Start: 30996, Stop: 31556, Start Num: 15

Candidate Starts for Egad\_43:

(Start: 15 @30996 has 122 MA's), (28, 31083), (33, 31095), (37, 31125), (43, 31149), (55, 31239), (79, 31398),

Gene: ElephantMan\_44 Start: 33745, Stop: 34404, Start Num: 15

Candidate Starts for ElephantMan\_44:

(Start: 15 @33745 has 122 MA's), (25, 33814), (30, 33838), (80, 34180), (120, 34366),

Gene: Elsa\_48 Start: 31859, Stop: 32455, Start Num: 15

Candidate Starts for Elsa\_48:

(Start: 15 @31859 has 122 MA's), (44, 32048), (48, 32075), (59, 32174), (69, 32228), (71, 32243), (117, 32447),

Gene: Elver\_93 Start: 52898, Stop: 53530, Start Num: 15

Candidate Starts for Elver\_93:

(Start: 8 @52859 has 2 MA's), (Start: 15 @52898 has 122 MA's), (19, 52913), (57, 53150), (65, 53219), (70, 53246), (83, 53342), (118, 53486),

Gene: EndAve\_56 Start: 37790, Stop: 38428, Start Num: 15

Candidate Starts for EndAve\_56:

(Start: 15 @37790 has 122 MA's), (49, 37997), (51, 38003), (68, 38141), (100, 38321), (118, 38399), (119, 38411),

Gene: Esketit\_49 Start: 32839, Stop: 33366, Start Num: 14

Candidate Starts for Esketit\_49:

(2, 32776), (4, 32794), (Start: 14 @32839 has 25 MA's), (27, 32926), (30, 32935), (34, 32950), (46, 33007), (48, 33028), (64, 33145), (70, 33181), (82, 33259), (97, 33325), (102, 33334), (107, 33349),

Gene: Fazel\_55 Start: 37262, Stop: 37894, Start Num: 15

Candidate Starts for Fazel\_55:

(Start: 15 @37262 has 122 MA's), (23, 37310), (40, 37406), (49, 37469), (68, 37613), (73, 37652), (92, 37766), (112, 37829), (118, 37865), (119, 37877),

Gene: FidgetOrca\_49 Start: 32832, Stop: 33359, Start Num: 14

Candidate Starts for FidgetOrca\_49:

(2, 32769), (4, 32787), (Start: 14 @32832 has 25 MA's), (27, 32919), (30, 32928), (34, 32943), (46, 33000), (48, 33021), (64, 33138), (70, 33174), (82, 33252), (97, 33318), (102, 33327), (107, 33342),

Gene: Figliar\_53 Start: 37692, Stop: 38330, Start Num: 15

Candidate Starts for Figliar\_53:

(Start: 15 @37692 has 122 MA's), (49, 37899), (51, 37905), (68, 38043), (100, 38223), (118, 38301), (119, 38313),

Gene: FortCran\_54 Start: 36957, Stop: 37574, Start Num: 15

Candidate Starts for FortCran\_54:

(Start: 15 @36957 has 122 MA's), (Start: 16 @36960 has 3 MA's), (49, 37164), (68, 37308), (98, 37473), (119, 37560),

Gene: FrodoSwaggins\_49 Start: 33490, Stop: 34014, Start Num: 14

Candidate Starts for FrodoSwaggins\_49:

(Start: 14 @33490 has 25 MA's), (27, 33577), (30, 33586), (34, 33601), (46, 33658), (48, 33679), (64, 33796), (70, 33832), (82, 33910), (85, 33928), (90, 33952), (97, 33976), (102, 33985),

Gene: FromIndy\_45 Start: 30371, Stop: 30901, Start Num: 13

Candidate Starts for FromIndy\_45:

(Start: 13 @30371 has 8 MA's), (27, 30461), (30, 30470), (39, 30509), (42, 30518), (49, 30566), (82, 30788), (91, 30836), (97, 30854),

Gene: Gandionco\_91 Start: 51754, Stop: 52386, Start Num: 15

Candidate Starts for Gandionco\_91:

(Start: 8 @51715 has 2 MA's), (Start: 15 @51754 has 122 MA's), (19, 51769), (57, 52006), (65, 52075), (70, 52102), (83, 52198), (118, 52342),

Gene: GantcherGoblin\_46 Start: 32217, Stop: 32750, Start Num: 15

Candidate Starts for GantcherGoblin\_46:

(Start: 15 @32217 has 122 MA's), (36, 32331), (41, 32358), (47, 32388), (50, 32412), (68, 32550), (71, 32574), (88, 32670), (106, 32712), (111, 32730),

Gene: Giantsbane\_46 Start: 32465, Stop: 33115, Start Num: 15

Candidate Starts for Giantsbane\_46:

(6, 32420), (11, 32435), (Start: 15 @32465 has 122 MA's), (25, 32534), (30, 32558),

Gene: Gill\_54 Start: 36803, Stop: 37399, Start Num: 16

Candidate Starts for Gill\_54:

(Start: 15 @36800 has 122 MA's), (Start: 16 @36803 has 3 MA's), (33, 36902), (49, 37007), (68, 37151), (91, 37301), (98, 37316), (119, 37385),

Gene: GirlPower\_44 Start: 33290, Stop: 33820, Start Num: 14

Candidate Starts for GirlPower\_44:

(Start: 14 @33290 has 25 MA's), (22, 33338), (27, 33377), (30, 33386), (34, 33401), (46, 33458), (47, 33461), (48, 33479), (63, 33602), (64, 33608), (70, 33644), (82, 33722), (97, 33788), (102, 33797), (105, 33809),

Gene: GoCrazy\_47 Start: 31735, Stop: 32331, Start Num: 15

Candidate Starts for GoCrazy\_47:

(Start: 15 @31735 has 122 MA's), (44, 31924), (48, 31951), (59, 32050), (69, 32104), (71, 32119), (117, 32323),

Gene: GoblinVoyage\_36 Start: 26330, Stop: 26851, Start Num: 15

Candidate Starts for GoblinVoyage\_36:

(Start: 15 @26330 has 122 MA's), (30, 26423), (69, 26666), (70, 26669), (71, 26681), (72, 26693), (82, 26750),

Gene: Gordon\_42 Start: 33925, Stop: 34584, Start Num: 15

Candidate Starts for Gordon\_42:

(Start: 15 @33925 has 122 MA's), (25, 33994), (30, 34018), (46, 34102), (49, 34126), (80, 34360), (116, 34513),

Gene: Gravy\_53 Start: 36473, Stop: 37072, Start Num: 15

Candidate Starts for Gravy\_53:

(Start: 15 @36473 has 122 MA's), (Start: 16 @36476 has 3 MA's), (33, 36575), (49, 36680), (68, 36824), (91, 36974), (98, 36989), (119, 37058),

Gene: Gusicorn\_57 Start: 37709, Stop: 38344, Start Num: 15

Candidate Starts for Gusicorn\_57:

(Start: 15 @37709 has 122 MA's), (49, 37916), (68, 38060), (118, 38315), (119, 38327),

Gene: Hankly\_47 Start: 31036, Stop: 31605, Start Num: 15

Candidate Starts for Hankly\_47:

(Start: 15 @31036 has 122 MA's), (44, 31225), (48, 31252), (58, 31327), (59, 31351), (69, 31405),

Gene: HazuAndZazu\_48 Start: 33090, Stop: 33614, Start Num: 14

Candidate Starts for HazuAndZazu\_48:

(2, 33027), (4, 33045), (Start: 14 @33090 has 25 MA's), (27, 33177), (30, 33186), (34, 33201), (46, 33258), (48, 33279), (64, 33396), (70, 33432), (82, 33510), (85, 33528), (90, 33552), (97, 33576), (102, 33585),

Gene: Heisenberger\_47 Start: 31299, Stop: 31895, Start Num: 15

Candidate Starts for Heisenberger\_47:

(Start: 15 @31299 has 122 MA's), (44, 31488), (48, 31515), (58, 31590), (59, 31614), (69, 31668), (71, 31683), (117, 31887),

Gene: HerbBucket\_43 Start: 30696, Stop: 31256, Start Num: 15

Candidate Starts for HerbBucket\_43:

(Start: 15 @30696 has 122 MA's), (28, 30783), (33, 30795), (37, 30825), (43, 30849), (55, 30939), (79, 31098),

Gene: Hortihabitatio\_55 Start: 37498, Stop: 38130, Start Num: 15

Candidate Starts for Hortihabitatio\_55:

(Start: 15 @37498 has 122 MA's), (23, 37546), (24, 37555), (31, 37594), (35, 37612), (49, 37705), (68, 37849), (73, 37888), (80, 37945), (92, 38002), (118, 38101), (119, 38113),

Gene: Hoshi\_48 Start: 32436, Stop: 32963, Start Num: 14

Candidate Starts for Hoshi\_48:

(2, 32373), (4, 32391), (Start: 14 @32436 has 25 MA's), (27, 32523), (30, 32532), (34, 32547), (46, 32604), (48, 32625), (64, 32742), (70, 32778), (82, 32856), (97, 32922), (102, 32931), (107, 32946),

Gene: HotFries\_35 Start: 26374, Stop: 26895, Start Num: 15

Candidate Starts for HotFries\_35:

(Start: 15 @26374 has 122 MA's), (30, 26467), (69, 26710), (70, 26713), (71, 26725), (72, 26737), (97, 26863),

Gene: Hydrus\_57 Start: 38564, Stop: 39199, Start Num: 15

Candidate Starts for Hydrus\_57:

(Start: 15 @38564 has 122 MA's), (49, 38771), (68, 38915), (118, 39170), (119, 39182),

Gene: IceWarrior\_48 Start: 32518, Stop: 33045, Start Num: 14

Candidate Starts for IceWarrior\_48:

(2, 32455), (Start: 14 @32518 has 25 MA's), (27, 32605), (30, 32614), (34, 32629), (46, 32686), (48, 32707), (64, 32824), (70, 32860), (82, 32938), (97, 33004), (102, 33013), (107, 33028),

Gene: Indigenous\_49 Start: 32833, Stop: 33360, Start Num: 14

Candidate Starts for Indigenous\_49:

(2, 32770), (4, 32788), (Start: 14 @32833 has 25 MA's), (27, 32920), (30, 32929), (34, 32944), (46, 33001), (48, 33022), (64, 33139), (70, 33175), (82, 33253), (97, 33319), (102, 33328), (107, 33343),



Gene: Ingrid\_46 Start: 33203, Stop: 33853, Start Num: 15

Candidate Starts for Ingrid\_46:

(Start: 8 @33164 has 2 MA's), (10, 33170), (Start: 15 @33203 has 122 MA's), (25, 33272), (30, 33296), (76, 33608), (95, 33698), (111, 33749), (115, 33776),

Gene: Inked\_48 Start: 34345, Stop: 34989, Start Num: 15

Candidate Starts for Inked\_48:

(Start: 15 @34345 has 122 MA's), (25, 34414),

Gene: Issa\_46 Start: 33364, Stop: 34023, Start Num: 15

Candidate Starts for Issa\_46:

(Start: 15 @33364 has 122 MA's), (25, 33433), (30, 33457), (49, 33565), (71, 33733), (80, 33799), (116, 33952), (120, 33985),

Gene: JEGGS\_47 Start: 31353, Stop: 31949, Start Num: 15

Candidate Starts for JEGGS\_47:

(Start: 15 @31353 has 122 MA's), (44, 31542), (48, 31569), (58, 31644), (59, 31668), (69, 31722), (71, 31737), (117, 31941),

Gene: Jaylociraptor\_49 Start: 32832, Stop: 33359, Start Num: 14

Candidate Starts for Jaylociraptor\_49:

(2, 32769), (4, 32787), (Start: 14 @32832 has 25 MA's), (27, 32919), (30, 32928), (34, 32943), (46, 33000), (48, 33021), (64, 33138), (70, 33174), (82, 33252), (97, 33318), (102, 33327), (107, 33342),

Gene: Jazzy4900\_49 Start: 33968, Stop: 34558, Start Num: 15

Candidate Starts for Jazzy4900\_49:

(Start: 15 @33968 has 122 MA's), (Start: 16 @33971 has 3 MA's), (38, 34091), (45, 34133), (47, 34139), (61, 34265), (63, 34274), (81, 34376), (83, 34385), (94, 34427), (118, 34514),

Gene: Jodelie19\_54 Start: 39096, Stop: 39734, Start Num: 15

Candidate Starts for Jodelie19\_54:

(Start: 15 @39096 has 122 MA's), (49, 39303), (51, 39309), (68, 39447), (100, 39627), (118, 39705), (119, 39717),

Gene: JoyLin\_44 Start: 33794, Stop: 34435, Start Num: 15

Candidate Starts for JoyLin\_44:

(Start: 15 @33794 has 122 MA's), (20, 33824), (26, 33872), (47, 33968), (61, 34088), (68, 34136), (84, 34223),

Gene: JulesRay\_56 Start: 36966, Stop: 37583, Start Num: 15

Candidate Starts for JulesRay\_56:

(Start: 15 @36966 has 122 MA's), (Start: 16 @36969 has 3 MA's), (49, 37173), (68, 37317), (103, 37491), (119, 37569),

Gene: Kardashian\_47 Start: 32934, Stop: 33467, Start Num: 13

Candidate Starts for Kardashian\_47:

(Start: 13 @32934 has 8 MA's), (21, 32979), (30, 33033), (42, 33093), (48, 33138), (70, 33291), (82, 33360), (89, 33402), (91, 33411), (97, 33426), (104, 33438),

Gene: Kardesai\_49 Start: 32007, Stop: 32576, Start Num: 15

Candidate Starts for Kardesai\_49:

(Start: 15 @32007 has 122 MA's), (44, 32196), (48, 32223), (58, 32298), (59, 32322), (69, 32376),

Gene: KeaneyLin\_47 Start: 31735, Stop: 32331, Start Num: 15

Candidate Starts for KeaneyLin\_47:

(Start: 15 @31735 has 122 MA's), (44, 31924), (48, 31951), (59, 32050), (69, 32104), (71, 32119), (117, 32323),

Gene: Kenosha\_54 Start: 38023, Stop: 38658, Start Num: 15

Candidate Starts for Kenosha\_54:

(Start: 15 @38023 has 122 MA's), (49, 38230), (51, 38236), (68, 38374), (118, 38629), (119, 38641),

Gene: Kerry\_53 Start: 36473, Stop: 37072, Start Num: 15

Candidate Starts for Kerry\_53:

(Start: 15 @36473 has 122 MA's), (Start: 16 @36476 has 3 MA's), (33, 36575), (49, 36680), (68, 36824), (91, 36974), (98, 36989), (119, 37058),

Gene: KevinMinion\_48 Start: 32975, Stop: 33508, Start Num: 15

Candidate Starts for KevinMinion\_48:

(Start: 15 @32975 has 122 MA's), (36, 33089), (41, 33116), (47, 33146), (50, 33170), (68, 33308), (71, 33332), (88, 33428), (106, 33470), (111, 33488),

Gene: Kinny\_51 Start: 34199, Stop: 34732, Start Num: 15

Candidate Starts for Kinny\_51:

(Start: 15 @34199 has 122 MA's), (36, 34313), (41, 34340), (47, 34370), (68, 34532), (71, 34556), (106, 34694), (111, 34712),

Gene: Leatheia\_47 Start: 31879, Stop: 32409, Start Num: 15

Candidate Starts for Leatheia\_47:

(Start: 15 @31879 has 122 MA's), (28, 31966), (36, 31993), (41, 32020), (47, 32050), (68, 32212), (71, 32236), (106, 32371), (111, 32389),

Gene: Lewando\_49 Start: 33491, Stop: 34024, Start Num: 15

Candidate Starts for Lewando\_49:

(Start: 15 @33491 has 122 MA's), (36, 33605), (41, 33632), (47, 33662), (68, 33824), (71, 33848), (106, 33986), (111, 34004),

Gene: LibertyBell\_44 Start: 30077, Stop: 30595, Start Num: 13

Candidate Starts for LibertyBell\_44:

(Start: 13 @30077 has 8 MA's), (27, 30164), (30, 30173), (33, 30182), (48, 30266), (55, 30308), (66, 30392), (82, 30485), (89, 30527), (91, 30536), (96, 30551),

Gene: LilHuddy\_46 Start: 33411, Stop: 34067, Start Num: 15

Candidate Starts for LilHuddy\_46:

(Start: 15 @33411 has 122 MA's), (25, 33480), (30, 33504),

Gene: Linda\_43 Start: 30992, Stop: 31552, Start Num: 15

Candidate Starts for Linda\_43:

(Start: 15 @30992 has 122 MA's), (28, 31079), (33, 31091), (37, 31121), (43, 31145), (55, 31235), (79, 31394),

Gene: Loretta\_46 Start: 33203, Stop: 33853, Start Num: 15

Candidate Starts for Loretta\_46:

(Start: 8 @33164 has 2 MA's), (10, 33170), (Start: 15 @33203 has 122 MA's), (25, 33272), (30, 33296), (76, 33608), (95, 33698), (111, 33749), (115, 33776),

Gene: LucySwiss\_46 Start: 33166, Stop: 33825, Start Num: 15

Candidate Starts for LucySwiss\_46:

(Start: 15 @33166 has 122 MA's), (25, 33235), (30, 33259), (71, 33535), (80, 33601), (116, 33754), (120, 33787),

Gene: Madamoto\_50 Start: 32898, Stop: 33428, Start Num: 14

Candidate Starts for Madamoto\_50:

(3, 32847), (7, 32865), (Start: 14 @32898 has 25 MA's), (22, 32946), (27, 32985), (30, 32994), (34, 33009), (42, 33042), (46, 33066), (47, 33069), (48, 33087), (70, 33240), (82, 33318), (97, 33384), (102, 33393), (107, 33408),

Gene: Madvan\_55 Start: 37433, Stop: 38068, Start Num: 15

Candidate Starts for Madvan\_55:

(Start: 15 @37433 has 122 MA's), (49, 37640), (68, 37784), (118, 38039), (119, 38051),

Gene: Magel\_55 Start: 36719, Stop: 37315, Start Num: 16

Candidate Starts for Magel\_55:

(Start: 15 @36716 has 122 MA's), (Start: 16 @36719 has 3 MA's), (33, 36818), (49, 36923), (68, 37067), (91, 37217), (98, 37232), (119, 37301),

Gene: MajinBuu\_55 Start: 37725, Stop: 38363, Start Num: 15

Candidate Starts for MajinBuu\_55:

(Start: 15 @37725 has 122 MA's), (49, 37932), (51, 37938), (68, 38076), (118, 38334), (119, 38346),

Gene: Makai\_44 Start: 33397, Stop: 34047, Start Num: 15

Candidate Starts for Makai\_44:

(Start: 15 @33397 has 122 MA's), (25, 33466), (30, 33490), (49, 33598),

Gene: Maya\_49 Start: 32846, Stop: 33373, Start Num: 14

Candidate Starts for Maya\_49:

(2, 32783), (4, 32801), (Start: 14 @32846 has 25 MA's), (27, 32933), (30, 32942), (34, 32957), (46, 33014), (48, 33035), (64, 33152), (70, 33188), (82, 33266), (97, 33332), (102, 33341), (107, 33356),

Gene: Meibysrarus\_47 Start: 32209, Stop: 32736, Start Num: 14

Candidate Starts for Meibysrarus\_47:

(2, 32146), (4, 32164), (Start: 14 @32209 has 25 MA's), (27, 32296), (30, 32305), (34, 32320), (46, 32377), (48, 32398), (64, 32515), (70, 32551), (82, 32629), (97, 32695), (102, 32704), (107, 32719),

Gene: Michelle\_43 Start: 30994, Stop: 31554, Start Num: 15

Candidate Starts for Michelle\_43:

(Start: 15 @30994 has 122 MA's), (28, 31081), (33, 31093), (37, 31123), (43, 31147), (55, 31237), (79, 31396),

Gene: Miek\_44 Start: 30383, Stop: 30913, Start Num: 13

Candidate Starts for Miek\_44:

(Start: 13 @30383 has 8 MA's), (27, 30473), (30, 30482), (39, 30521), (42, 30530), (49, 30578), (82, 30800), (91, 30848), (97, 30866),

Gene: MiniBagel\_44 Start: 34052, Stop: 34711, Start Num: 15

Candidate Starts for MiniBagel\_44:

(Start: 15 @34052 has 122 MA's), (25, 34121), (30, 34145), (71, 34421), (120, 34673),

Gene: Mooshroom\_50 Start: 32007, Stop: 32576, Start Num: 15

Candidate Starts for Mooshroom\_50:

(Start: 15 @32007 has 122 MA's), (44, 32196), (48, 32223), (58, 32298), (59, 32322), (69, 32376),

Gene: Moozy\_35 Start: 26330, Stop: 26851, Start Num: 15

Candidate Starts for Moozy\_35:

(Start: 15 @26330 has 122 MA's), (30, 26423), (69, 26666), (70, 26669), (71, 26681), (72, 26693), (97, 26819),

Gene: Mossy\_58 Start: 39452, Stop: 40093, Start Num: 15

Candidate Starts for Mossy\_58:

(Start: 15 @39452 has 122 MA's), (23, 39500), (31, 39548), (40, 39596), (49, 39659), (68, 39803), (71, 39827), (73, 39842), (101, 39992), (108, 40007), (118, 40064), (119, 40076),

Gene: MrAaronian\_43 Start: 30994, Stop: 31554, Start Num: 15

Candidate Starts for MrAaronian\_43:

(Start: 15 @30994 has 122 MA's), (28, 31081), (33, 31093), (37, 31123), (43, 31147), (55, 31237), (79, 31396),

Gene: Mudcat\_45 Start: 32712, Stop: 33308, Start Num: 15

Candidate Starts for Mudcat\_45:

(Start: 15 @32712 has 122 MA's), (44, 32901), (48, 32928), (58, 33003), (59, 33027), (69, 33081), (71, 33096), (117, 33300),

Gene: Mysticmoon\_56 Start: 38307, Stop: 38939, Start Num: 15

Candidate Starts for Mysticmoon\_56:

(Start: 15 @38307 has 122 MA's), (23, 38355), (31, 38403), (40, 38451), (49, 38514), (60, 38616), (68, 38658), (73, 38697), (80, 38754), (93, 38817), (101, 38838), (112, 38874), (118, 38910), (119, 38922),

Gene: Nadmeg\_56 Start: 38679, Stop: 39314, Start Num: 15

Candidate Starts for Nadmeg\_56:

(Start: 15 @38679 has 122 MA's), (49, 38886), (68, 39030), (118, 39285), (119, 39297),

Gene: Namo\_50 Start: 33177, Stop: 33704, Start Num: 14

Candidate Starts for Namo\_50:

(2, 33114), (4, 33132), (Start: 14 @33177 has 25 MA's), (27, 33264), (30, 33273), (34, 33288), (46, 33345), (48, 33366), (64, 33483), (70, 33519), (82, 33597), (97, 33663), (102, 33672), (107, 33687),

Gene: NapoleonB\_48 Start: 31823, Stop: 32392, Start Num: 15

Candidate Starts for NapoleonB\_48:

(Start: 15 @31823 has 122 MA's), (44, 32012), (48, 32039), (58, 32114), (59, 32138), (69, 32192),

Gene: Nason\_48 Start: 31859, Stop: 32455, Start Num: 15

Candidate Starts for Nason\_48:

(Start: 15 @31859 has 122 MA's), (44, 32048), (48, 32075), (59, 32174), (69, 32228), (71, 32243), (117, 32447),

Gene: Natasha\_43 Start: 30712, Stop: 31287, Start Num: 15

Candidate Starts for Natasha\_43:

(Start: 15 @30712 has 122 MA's), (28, 30799), (30, 30805), (37, 30841), (38, 30844), (48, 30910), (70, 31069), (89, 31147),

Gene: Navi1117\_50 Start: 32920, Stop: 33453, Start Num: 15

Candidate Starts for Navi1117\_50:

(Start: 15 @32920 has 122 MA's), (25, 32989), (36, 33034), (41, 33061), (47, 33091), (50, 33115), (68, 33253), (71, 33277), (88, 33373), (106, 33415), (111, 33433),

Gene: Nightmare\_46 Start: 34312, Stop: 34971, Start Num: 15

Candidate Starts for Nightmare\_46:

(Start: 15 @34312 has 122 MA's), (25, 34381), (30, 34405), (71, 34681), (74, 34699), (80, 34747), (120, 34933),

Gene: Niktson\_44 Start: 33745, Stop: 34404, Start Num: 15

Candidate Starts for Niktson\_44:

(Start: 15 @33745 has 122 MA's), (25, 33814), (30, 33838), (80, 34180), (120, 34366),

Gene: Nithya\_55 Start: 37534, Stop: 38172, Start Num: 15

Candidate Starts for Nithya\_55:

(Start: 15 @37534 has 122 MA's), (49, 37741), (51, 37747), (68, 37885), (100, 38065), (118, 38143), (119, 38155),

Gene: Nivinsha\_45 Start: 33292, Stop: 33951, Start Num: 15

Candidate Starts for Nivinsha\_45:

(Start: 8 @33253 has 2 MA's), (12, 33268), (Start: 15 @33292 has 122 MA's), (25, 33361), (30, 33385), (46, 33469), (49, 33493), (111, 33847),

Gene: NoPickles\_53 Start: 36138, Stop: 36737, Start Num: 15

Candidate Starts for NoPickles\_53:

(Start: 15 @36138 has 122 MA's), (Start: 16 @36141 has 3 MA's), (33, 36240), (49, 36345), (68, 36489), (91, 36639), (98, 36654), (119, 36723),

Gene: Odesza\_53 Start: 36528, Stop: 37145, Start Num: 15

Candidate Starts for Odesza\_53:

(Start: 15 @36528 has 122 MA's), (Start: 16 @36531 has 3 MA's), (33, 36630), (49, 36735), (68, 36879), (119, 37131),

Gene: OhMyWard\_53 Start: 38645, Stop: 39286, Start Num: 15

Candidate Starts for OhMyWard\_53:

(Start: 15 @38645 has 122 MA's), (23, 38693), (31, 38741), (40, 38789), (49, 38852), (68, 38996), (71, 39020), (73, 39035), (80, 39092), (101, 39185), (108, 39200), (118, 39257), (119, 39269),

Gene: OlgasClover\_56 Start: 38677, Stop: 39315, Start Num: 15

Candidate Starts for OlgasClover\_56:

(Start: 15 @38677 has 122 MA's), (49, 38884), (51, 38890), (68, 39028), (100, 39208), (118, 39286), (119, 39298),

Gene: OlympicHelado\_49 Start: 32860, Stop: 33387, Start Num: 14

Candidate Starts for OlympicHelado\_49:

(2, 32797), (4, 32815), (Start: 14 @32860 has 25 MA's), (27, 32947), (30, 32956), (34, 32971), (46, 33028), (48, 33049), (64, 33166), (70, 33202), (82, 33280), (97, 33346), (102, 33355), (107, 33370),

Gene: Paella\_95 Start: 53449, Stop: 54120, Start Num: 8

Candidate Starts for Paella\_95:

(Start: 8 @53449 has 2 MA's), (Start: 15 @53488 has 122 MA's), (19, 53503), (57, 53740), (65, 53809), (70, 53836), (83, 53932), (118, 54076),

Gene: Petito\_56 Start: 38630, Stop: 39244, Start Num: 15

Candidate Starts for Petito\_56:

(Start: 15 @38630 has 122 MA's), (Start: 16 @38633 has 3 MA's), (49, 38837), (68, 38981), (77, 39050), (80, 39077), (87, 39116), (96, 39137), (103, 39152), (119, 39230),

Gene: Phaby\_46 Start: 33645, Stop: 34295, Start Num: 15

Candidate Starts for Phaby\_46:

(Start: 15 @33645 has 122 MA's), (25, 33714), (30, 33738),

Gene: Phaila\_49 Start: 32107, Stop: 32637, Start Num: 15

Candidate Starts for Phaila\_49:

(Start: 15 @32107 has 122 MA's), (25, 32176), (36, 32221), (41, 32248), (47, 32278), (50, 32302), (68, 32440), (71, 32464), (88, 32560), (106, 32602),

Gene: Phepper\_56 Start: 37695, Stop: 38330, Start Num: 15

Candidate Starts for Phepper\_56:

(Start: 15 @37695 has 122 MA's), (49, 37902), (68, 38046), (118, 38301), (119, 38313),

Gene: Pherobrine\_56 Start: 38600, Stop: 39232, Start Num: 15

Candidate Starts for Pherobrine\_56:

(Start: 15 @38600 has 122 MA's), (23, 38648), (31, 38696), (40, 38744), (49, 38807), (60, 38909), (68, 38951), (73, 38990), (80, 39047), (93, 39110), (101, 39131), (112, 39167), (118, 39203), (119, 39215),

Gene: PherryCruz\_35 Start: 26326, Stop: 26847, Start Num: 15

Candidate Starts for PherryCruz\_35:

(Start: 15 @26326 has 122 MA's), (30, 26419), (69, 26662), (70, 26665), (71, 26677), (72, 26689), (82, 26746),

Gene: Pippin15\_44 Start: 30581, Stop: 31216, Start Num: 15

Candidate Starts for Pippin15\_44:

(Start: 15 @30581 has 122 MA's), (26, 30659), (47, 30755), (61, 30875), (67, 30917), (68, 30923), (84, 31010), (96, 31058),

Gene: Popy\_49 Start: 33490, Stop: 34014, Start Num: 14

Candidate Starts for Popy\_49:

(Start: 14 @33490 has 25 MA's), (27, 33577), (30, 33586), (34, 33601), (46, 33658), (48, 33679), (64, 33796), (70, 33832), (82, 33910), (85, 33928), (90, 33952), (97, 33976), (102, 33985),

Gene: Powelldog\_48 Start: 31692, Stop: 32306, Start Num: 15

Candidate Starts for Powelldog\_48:

(Start: 15 @31692 has 122 MA's), (28, 31779), (30, 31785), (33, 31791), (37, 31821), (49, 31893), (70, 32049), (71, 32061), (72, 32073), (110, 32217), (114, 32241), (121, 32289),

Gene: ProfFrink\_43 Start: 30995, Stop: 31555, Start Num: 15

Candidate Starts for ProfFrink\_43:

(Start: 15 @30995 has 122 MA's), (28, 31082), (33, 31094), (37, 31124), (43, 31148), (55, 31238), (79, 31397),

Gene: Qui\_95 Start: 53449, Stop: 54120, Start Num: 8

Candidate Starts for Qui\_95:

(Start: 8 @53449 has 2 MA's), (Start: 15 @53488 has 122 MA's), (19, 53503), (57, 53740), (65, 53809), (70, 53836), (83, 53932), (118, 54076),

Gene: Rainydai\_44 Start: 30767, Stop: 31297, Start Num: 13

Candidate Starts for Rainydai\_44:

(Start: 13 @30767 has 8 MA's), (27, 30857), (30, 30866), (39, 30905), (42, 30914), (49, 30962), (82, 31184), (91, 31232), (97, 31250),

Gene: Raunak\_46 Start: 30692, Stop: 31252, Start Num: 15

Candidate Starts for Raunak\_46:

(Start: 15 @30692 has 122 MA's), (28, 30779), (33, 30791), (37, 30821), (43, 30845), (55, 30935), (79, 31094),

Gene: RavenPuff\_35 Start: 26326, Stop: 26847, Start Num: 15

Candidate Starts for RavenPuff\_35:

(Start: 15 @26326 has 122 MA's), (30, 26419), (69, 26662), (70, 26665), (71, 26677), (72, 26689), (82, 26746),

Gene: Regigigas\_46 Start: 30768, Stop: 31298, Start Num: 13

Candidate Starts for Regigigas\_46:

(Start: 13 @30768 has 8 MA's), (27, 30858), (30, 30867), (39, 30906), (42, 30915), (49, 30963), (82, 31185), (91, 31233), (97, 31251),

Gene: Renaldo\_52 Start: 33800, Stop: 34333, Start Num: 15

Candidate Starts for Renaldo\_52:

(Start: 15 @33800 has 122 MA's), (36, 33914), (41, 33941), (47, 33971), (68, 34133), (71, 34157), (106, 34295),

Gene: Rickmore\_51 Start: 35485, Stop: 36111, Start Num: 15

Candidate Starts for Rickmore\_51:

(Start: 15 @35485 has 122 MA's), (43, 35644), (49, 35692), (56, 35737), (68, 35836), (75, 35899), (99, 36004), (104, 36013), (119, 36094),

Gene: Rima\_50 Start: 33177, Stop: 33704, Start Num: 14

Candidate Starts for Rima\_50:

(2, 33114), (4, 33132), (Start: 14 @33177 has 25 MA's), (27, 33264), (30, 33273), (34, 33288), (46, 33345), (48, 33366), (64, 33483), (70, 33519), (82, 33597), (97, 33663), (102, 33672), (107, 33687),

Gene: Roney\_54 Start: 36826, Stop: 37425, Start Num: 15

Candidate Starts for Roney\_54:

(Start: 15 @36826 has 122 MA's), (Start: 16 @36829 has 3 MA's), (33, 36928), (49, 37033), (68, 37177), (91, 37327), (98, 37342), (119, 37411),

Gene: RosaAsantewaa\_32 Start: 25470, Stop: 25979, Start Num: 14

Candidate Starts for RosaAsantewaa\_32:

(1, 25332), (Start: 14 @25470 has 25 MA's), (32, 25569), (50, 25662), (61, 25758), (69, 25806), (82, 25884), (86, 25911), (102, 25959),

Gene: Runhaar\_55 Start: 37495, Stop: 38130, Start Num: 15

Candidate Starts for Runhaar\_55:

(Start: 15 @37495 has 122 MA's), (49, 37702), (68, 37846), (118, 38101), (119, 38113),

Gene: RustyBoy\_43 Start: 30693, Stop: 31268, Start Num: 15

Candidate Starts for RustyBoy\_43:

(Start: 15 @30693 has 122 MA's), (28, 30780), (30, 30786), (37, 30822), (38, 30825), (48, 30891), (53, 30921), (70, 31050), (89, 31128),

Gene: Salk\_43 Start: 30992, Stop: 31552, Start Num: 15

Candidate Starts for Salk\_43:

(Start: 15 @30992 has 122 MA's), (28, 31079), (33, 31091), (37, 31121), (43, 31145), (55, 31235), (79, 31394),

Gene: Scap1\_35 Start: 26203, Stop: 26724, Start Num: 15

Candidate Starts for Scap1\_35:

(Start: 15 @26203 has 122 MA's), (21, 26242), (30, 26296), (70, 26542), (71, 26554),

Gene: ScienceWizSam\_45 Start: 33402, Stop: 34061, Start Num: 15

Candidate Starts for ScienceWizSam\_45:

(Start: 15 @33402 has 122 MA's), (25, 33471), (30, 33495), (46, 33579), (111, 33957), (113, 33969),

Gene: Secretariat\_54 Start: 36535, Stop: 37155, Start Num: 15

Candidate Starts for Secretariat\_54:

(Start: 15 @36535 has 122 MA's), (38, 36673), (49, 36742), (68, 36886), (118, 37126), (119, 37138),

Gene: SendItCS\_43 Start: 30371, Stop: 30901, Start Num: 13

Candidate Starts for SendItCS\_43:

(Start: 13 @30371 has 8 MA's), (27, 30461), (30, 30470), (39, 30509), (42, 30518), (49, 30566), (82, 30788), (91, 30836), (97, 30854),

Gene: Serenabean\_42 Start: 30574, Stop: 31215, Start Num: 15

Candidate Starts for Serenabean\_42:

(Start: 15 @30574 has 122 MA's), (28, 30658), (61, 30865), (68, 30913), (73, 30952), (84, 31006),

Gene: ShaggyRogers\_58 Start: 37445, Stop: 38080, Start Num: 15

Candidate Starts for ShaggyRogers\_58:

(Start: 15 @37445 has 122 MA's), (49, 37652), (68, 37796), (118, 38051), (119, 38063),

Gene: SheRa\_36 Start: 26372, Stop: 26893, Start Num: 15

Candidate Starts for SheRa\_36:

(Start: 15 @26372 has 122 MA's), (30, 26465), (69, 26708), (70, 26711), (71, 26723), (72, 26735), (97, 26861),

Gene: Shepard\_48 Start: 33483, Stop: 34139, Start Num: 15

Candidate Starts for Shepard\_48:

(Start: 15 @33483 has 122 MA's), (25, 33552), (30, 33576), (52, 33702),

Gene: Shiba\_42 Start: 30692, Stop: 31252, Start Num: 15

Candidate Starts for Shiba\_42:

(Start: 15 @30692 has 122 MA's), (28, 30779), (33, 30791), (37, 30821), (43, 30845), (55, 30935), (79, 31094),

Gene: Sloopyjoe\_43 Start: 30996, Stop: 31556, Start Num: 15

Candidate Starts for Sloopyjoe\_43:

(Start: 15 @30996 has 122 MA's), (28, 31083), (33, 31095), (37, 31125), (43, 31149), (55, 31239), (79, 31398),

Gene: Soshi\_48 Start: 33109, Stop: 33633, Start Num: 14

Candidate Starts for Soshi\_48:



(2, 33046), (4, 33064), (Start: 14 @33109 has 25 MA's), (27, 33196), (30, 33205), (34, 33220), (46, 33277), (48, 33298), (64, 33415), (70, 33451), (82, 33529), (85, 33547), (90, 33571), (97, 33595), (102, 33604),

Gene: Spectropatronm\_49 Start: 32839, Stop: 33366, Start Num: 14

Candidate Starts for Spectropatronm\_49:

(2, 32776), (4, 32794), (Start: 14 @32839 has 25 MA's), (27, 32926), (30, 32935), (34, 32950), (46, 33007), (48, 33028), (64, 33145), (70, 33181), (82, 33259), (97, 33325), (102, 33334), (107, 33349),

Gene: Sporto\_44 Start: 32458, Stop: 33057, Start Num: 15

Candidate Starts for Sporto\_44:

(5, 32404), (Start: 15 @32458 has 122 MA's), (27, 32542), (29, 32548), (30, 32551), (33, 32557), (43, 32611), (49, 32659), (55, 32701), (70, 32824), (71, 32836), (78, 32848),

Gene: StarLord\_43 Start: 30995, Stop: 31555, Start Num: 15

Candidate Starts for StarLord\_43:

(Start: 15 @30995 has 122 MA's), (28, 31082), (33, 31094), (37, 31124), (43, 31148), (55, 31238), (79, 31397),

Gene: Stayer\_43 Start: 30992, Stop: 31552, Start Num: 15

Candidate Starts for Stayer\_43:

(Start: 15 @30992 has 122 MA's), (28, 31079), (33, 31091), (37, 31121), (43, 31145), (55, 31235), (79, 31394),

Gene: Sunny4976\_48 Start: 33968, Stop: 34558, Start Num: 15

Candidate Starts for Sunny4976\_48:

(Start: 15 @33968 has 122 MA's), (Start: 16 @33971 has 3 MA's), (38, 34091), (45, 34133), (47, 34139), (61, 34265), (63, 34274), (81, 34376), (83, 34385), (94, 34427), (118, 34514),

Gene: Sweetclover\_39 Start: 29341, Stop: 30015, Start Num: 15

Candidate Starts for Sweetclover\_39:

(Start: 15 @29341 has 122 MA's), (28, 29425), (47, 29512), (61, 29632), (63, 29641), (68, 29680), (73, 29719), (91, 29824), (92, 29830), (109, 29887),

Gene: Synopsis\_43 Start: 33411, Stop: 34073, Start Num: 15

Candidate Starts for Synopsis\_43:

(Start: 15 @33411 has 122 MA's), (25, 33480), (30, 33504), (49, 33612), (71, 33780), (80, 33846), (120, 34035),

Gene: TaidaOne\_49 Start: 33344, Stop: 33871, Start Num: 14

Candidate Starts for TaidaOne\_49:

(2, 33281), (Start: 14 @33344 has 25 MA's), (27, 33431), (30, 33440), (34, 33455), (46, 33512), (48, 33533), (64, 33650), (70, 33686), (82, 33764), (97, 33830), (102, 33839), (107, 33854),

Gene: Tanis\_54 Start: 36646, Stop: 37245, Start Num: 15

Candidate Starts for Tanis\_54:

(Start: 15 @36646 has 122 MA's), (Start: 16 @36649 has 3 MA's), (33, 36748), (49, 36853), (68, 36997), (91, 37147), (98, 37162), (119, 37231),

Gene: Tatanka\_43 Start: 33581, Stop: 34243, Start Num: 15

Candidate Starts for Tatanka\_43:

(Start: 15 @33581 has 122 MA's), (25, 33650), (30, 33674), (80, 34016), (120, 34205),

Gene: Teacup\_45 Start: 33771, Stop: 34433, Start Num: 15  
Candidate Starts for Teacup\_45:  
(Start: 15 @33771 has 122 MA's), (25, 33840), (30, 33864), (71, 34140), (80, 34206), (120, 34395),

Gene: TenaciousP\_55 Start: 39058, Stop: 39696, Start Num: 15  
Candidate Starts for TenaciousP\_55:  
(Start: 15 @39058 has 122 MA's), (49, 39265), (51, 39271), (68, 39409), (100, 39589), (118, 39667),  
(119, 39679),

Gene: Tenney120\_49 Start: 32517, Stop: 33050, Start Num: 15  
Candidate Starts for Tenney120\_49:  
(Start: 15 @32517 has 122 MA's), (36, 32631), (41, 32658), (47, 32688), (50, 32712), (68, 32850), (71,  
32874), (88, 32970), (106, 33012), (111, 33030),

Gene: Tenno\_45 Start: 34060, Stop: 34719, Start Num: 15  
Candidate Starts for Tenno\_45:  
(Start: 15 @34060 has 122 MA's), (25, 34129), (30, 34153), (71, 34429), (120, 34681),

Gene: Thiqqums\_45 Start: 30767, Stop: 31297, Start Num: 13  
Candidate Starts for Thiqqums\_45:  
(Start: 13 @30767 has 8 MA's), (27, 30857), (30, 30866), (39, 30905), (42, 30914), (49, 30962), (82,  
31184), (91, 31232), (97, 31250),

Gene: TieDye\_48 Start: 32432, Stop: 32959, Start Num: 14  
Candidate Starts for TieDye\_48:  
(2, 32369), (4, 32387), (Start: 14 @32432 has 25 MA's), (27, 32519), (30, 32528), (34, 32543), (46,  
32600), (48, 32621), (64, 32738), (70, 32774), (82, 32852), (97, 32918), (102, 32927), (107, 32942),

Gene: Tokki\_48 Start: 33269, Stop: 33919, Start Num: 15  
Candidate Starts for Tokki\_48:  
(6, 33224), (11, 33239), (Start: 15 @33269 has 122 MA's), (25, 33338), (30, 33362),

Gene: TonyStarch\_48 Start: 32553, Stop: 33080, Start Num: 14  
Candidate Starts for TonyStarch\_48:  
(2, 32490), (4, 32508), (Start: 14 @32553 has 25 MA's), (27, 32640), (30, 32649), (34, 32664), (46,  
32721), (48, 32742), (64, 32859), (70, 32895), (82, 32973), (97, 33039), (102, 33048), (107, 33063),

Gene: Tribby\_48 Start: 31560, Stop: 32129, Start Num: 15  
Candidate Starts for Tribby\_48:  
(Start: 15 @31560 has 122 MA's), (44, 31749), (48, 31776), (58, 31851), (59, 31875), (69, 31929), (71,  
31944),

Gene: TrixiePhattel\_48 Start: 32174, Stop: 32704, Start Num: 15  
Candidate Starts for TrixiePhattel\_48:  
(Start: 15 @32174 has 122 MA's), (28, 32261), (36, 32288), (41, 32315), (47, 32345), (68, 32507), (71,  
32531), (84, 32600),

Gene: Truckee\_42 Start: 33185, Stop: 33835, Start Num: 15  
Candidate Starts for Truckee\_42:  
(Start: 15 @33185 has 122 MA's), (25, 33254), (30, 33278), (49, 33386),

Gene: Trufflozitus\_58 Start: 37308, Stop: 37925, Start Num: 15  
Candidate Starts for Trufflozitus\_58:

(Start: 15 @37308 has 122 MA's), (Start: 16 @37311 has 3 MA's), (49, 37515), (68, 37659), (103, 37833), (119, 37911),

Gene: Trustiboi\_44 Start: 33620, Stop: 34279, Start Num: 15

Candidate Starts for Trustiboi\_44:

(Start: 15 @33620 has 122 MA's), (25, 33689), (30, 33713), (46, 33797), (49, 33821), (111, 34175), (113, 34187), (116, 34208),

Gene: Untouchable\_56 Start: 38044, Stop: 38679, Start Num: 15

Candidate Starts for Untouchable\_56:

(Start: 15 @38044 has 122 MA's), (49, 38251), (68, 38395), (118, 38650), (119, 38662),

Gene: Uzumaki\_45 Start: 32211, Stop: 32744, Start Num: 15

Candidate Starts for Uzumaki\_45:

(Start: 15 @32211 has 122 MA's), (36, 32325), (41, 32352), (47, 32382), (50, 32406), (68, 32544), (71, 32568), (88, 32664), (106, 32706), (111, 32724),

Gene: Vardy\_54 Start: 37385, Stop: 38020, Start Num: 15

Candidate Starts for Vardy\_54:

(Start: 15 @37385 has 122 MA's), (49, 37592), (68, 37736), (118, 37991), (119, 38003),

Gene: Xenomorph\_44 Start: 31272, Stop: 31862, Start Num: 15

Candidate Starts for Xenomorph\_44:

(Start: 15 @31272 has 122 MA's), (44, 31461), (48, 31488), (58, 31563), (59, 31587), (69, 31641), (71, 31656), (88, 31755),

Gene: Yotsuba\_44 Start: 33812, Stop: 34453, Start Num: 15

Candidate Starts for Yotsuba\_44:

(Start: 15 @33812 has 122 MA's), (20, 33842), (26, 33890), (47, 33986), (61, 34106), (67, 34148), (68, 34154), (84, 34241),

Gene: Zeina\_48 Start: 32530, Stop: 33063, Start Num: 15

Candidate Starts for Zeina\_48:

(Start: 15 @32530 has 122 MA's), (36, 32644), (41, 32671), (47, 32701), (50, 32725), (68, 32863), (71, 32887), (88, 32983), (106, 33025), (111, 33043),

Gene: Zeph\_57 Start: 38532, Stop: 39167, Start Num: 15

Candidate Starts for Zeph\_57:

(Start: 15 @38532 has 122 MA's), (49, 38739), (56, 38784), (60, 38841), (68, 38883), (118, 39138), (119, 39150),

Gene: Zippen\_46 Start: 34044, Stop: 34688, Start Num: 15

Candidate Starts for Zippen\_46:

(Start: 15 @34044 has 122 MA's), (25, 34113),