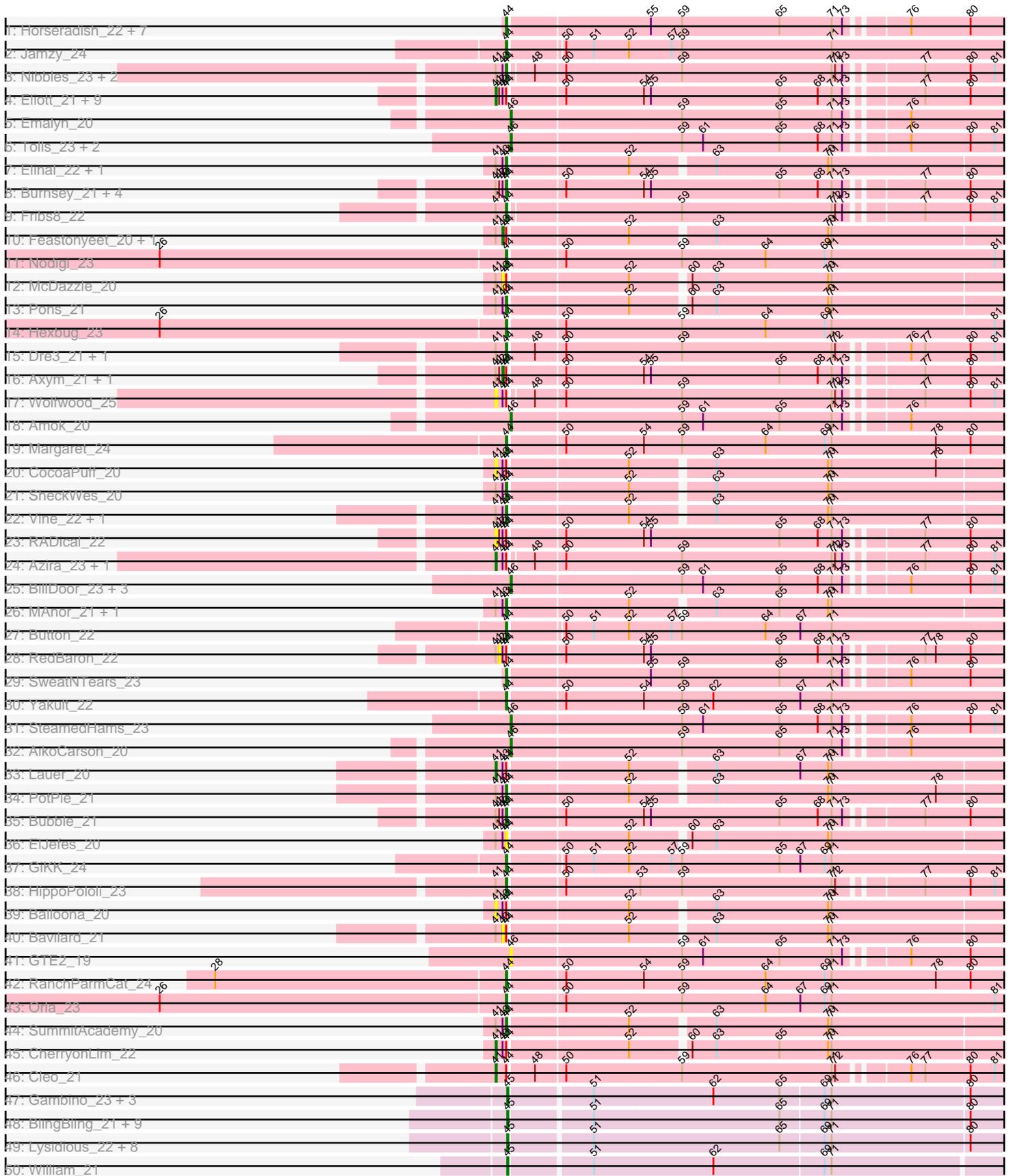
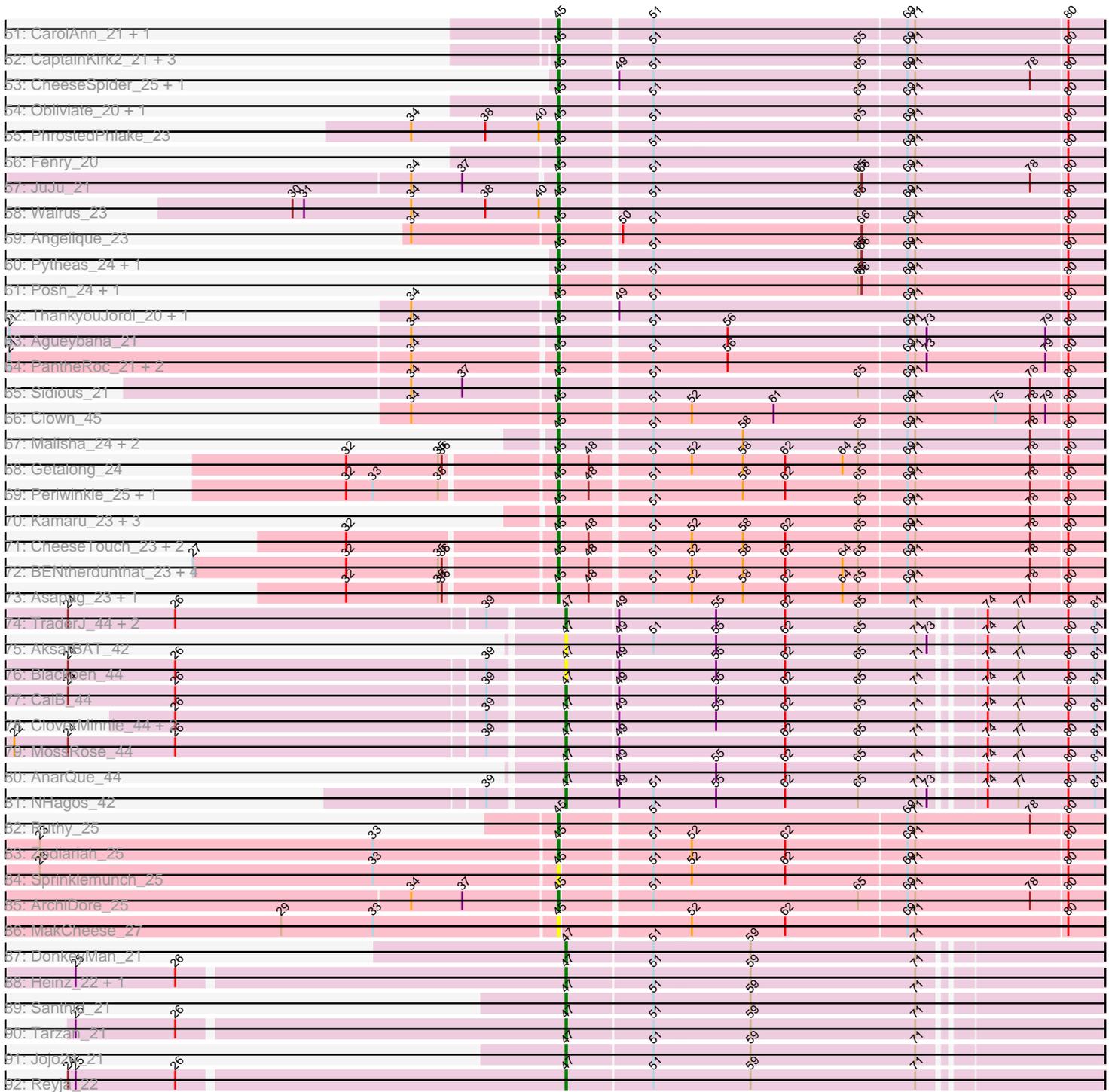


# Zoomed Pham 283529



# Zoomed Pham 283529



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 283529 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283529 has 175 members, 32 are drafts.

Phages represented in each track:

- Track 1 : Horseradish\_22, MScarn\_23, Blondies\_22, Biskit\_22, Buttrmlkdreams\_21, Troje\_21, SketchMex\_20, Yummy\_22
- Track 2 : Jamzy\_24
- Track 3 : Nibbles\_23, MaVan\_23, Survivors\_23
- Track 4 : Elliott\_21, Carsonalex\_22, ChickenTender\_23, RSchmailz\_22, Nina\_22, Sopespian\_21, GoldHunter\_22, Socotra\_22, PsychoKiller\_21, Starburst\_22
- Track 5 : Emalyn\_20
- Track 6 : Tolls\_23, AndPeggy\_20, Yarn\_20
- Track 7 : Elinal\_22, KayGee\_21
- Track 8 : Burnsey\_21, Typhonmarchy\_21, Agatha\_21, MunkgeeRoachy\_21, Quasar\_21
- Track 9 : Fribs8\_22
- Track 10 : Feastonyeet\_20, BigChungus\_20
- Track 11 : Nodigi\_23
- Track 12 : McDazzle\_20
- Track 13 : Pons\_21
- Track 14 : Hexbug\_23
- Track 15 : Dre3\_21, Gibbous\_21
- Track 16 : Axym\_21, Cozz\_21
- Track 17 : Wolfwood\_25
- Track 18 : Amok\_20
- Track 19 : Margaret\_24
- Track 20 : CocoaPuff\_20
- Track 21 : SheckWes\_20
- Track 22 : Vine\_22, Yucky\_21
- Track 23 : RADical\_22
- Track 24 : Azira\_23, Zareef\_23
- Track 25 : BillDoor\_23, CanesSauce\_21, CaramelLatte\_21, ChocoMunchkin\_21
- Track 26 : MAnor\_21, Mayweather\_22
- Track 27 : Button\_22
- Track 28 : RedBaron\_22
- Track 29 : SweatNTears\_23
- Track 30 : Yakult\_22
- Track 31 : SteamedHams\_23
- Track 32 : AikoCarson\_20
- Track 33 : Lauer\_20
- Track 34 : PotPie\_21

- Track 35 : Bubble\_21
- Track 36 : ElJefes\_20
- Track 37 : GiKK\_24
- Track 38 : HippoPololi\_23
- Track 39 : Balloona\_20
- Track 40 : Bavidard\_21
- Track 41 : GTE2\_19
- Track 42 : RanchParmCat\_24
- Track 43 : Orla\_23
- Track 44 : SummitAcademy\_20
- Track 45 : CherryonLim\_22
- Track 46 : Cleo\_21
- Track 47 : Gambino\_23, MissRona\_23, Blueberry\_23, Azula\_23
- Track 48 : BlingBling\_21, Zarbodnamra\_21, JasperJr\_21, Zilla\_21, Archis\_22, Utz\_21, Guacamole\_21, Melba\_21, Barco\_21, MintFen\_21
- Track 49 : Lysidious\_22, Begonia\_22, Malachai\_22, Pipp\_21, Jalammah\_23, Mellie\_20, Hitter\_21, Samba\_21, Frokostdame\_21
- Track 50 : William\_21
- Track 51 : CarolAnn\_21, Blino\_21
- Track 52 : CaptainKirk2\_21, UmaThurman\_21, Delian\_21, Wisp\_20
- Track 53 : CheeseSpider\_25, Murp\_22
- Track 54 : Obliviate\_20, ZiggyZoo\_20
- Track 55 : PhrostedPhlake\_23
- Track 56 : Fenry\_20
- Track 57 : JuJu\_21
- Track 58 : Walrus\_23
- Track 59 : Angelique\_23
- Track 60 : Pytheas\_24, Jablanski\_24
- Track 61 : Posh\_24, Wrigley\_24
- Track 62 : ThankyouJordi\_20, WelcomeAyanna\_20
- Track 63 : Agueybana\_21
- Track 64 : PantheRoc\_21, BaxterFox\_20, Yeezy\_22
- Track 65 : Sidious\_21
- Track 66 : Clown\_45
- Track 67 : Malisha\_24, Squiddly\_25, Spooky\_23
- Track 68 : Getalong\_24
- Track 69 : Periwinkle\_25, ShawBrad\_23
- Track 70 : Kamaru\_23, Holliday\_23, Budski\_23, Whitney\_24
- Track 71 : CheeseTouch\_23, Lutum\_23, Kenna\_22
- Track 72 : BENtherdunthat\_23, BearBQ\_22, Kuwabara\_22, MortyNRick\_22, Birdsong\_22
- Track 73 : Asapag\_23, BotCity\_23
- Track 74 : TraderJ\_44, Yeshua\_44, Wooper\_44
- Track 75 : AksarBAT\_42
- Track 76 : Blackpen\_44
- Track 77 : CaiB\_44
- Track 78 : CloverMinnie\_44, MakoManhole\_44, FelixTres\_44
- Track 79 : MossRose\_44
- Track 80 : AnarQue\_44
- Track 81 : NHagos\_42
- Track 82 : Ruthy\_25
- Track 83 : Zodiariah\_25
- Track 84 : Sprinklemunch\_25

- Track 85 : ArchiDore\_25
- Track 86 : MakCheese\_27
- Track 87 : DonkeyMan\_21
- Track 88 : Heinz\_22, Hibiscus\_21
- Track 89 : Santhid\_21
- Track 90 : Tarzan\_21
- Track 91 : Jojo24\_21
- Track 92 : Reyja\_22

**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 70 of the 143 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agueybana\_21, Angelique\_23, ArchiDore\_25, Archis\_22, Asapag\_23, Azula\_23, BENtherdunthat\_23, Barco\_21, BaxterFox\_20, BearBQ\_22, Begonia\_22, Birdsong\_22, BlingBling\_21, Blino\_21, Blueberry\_23, BotCity\_23, Budski\_23, CaptainKirk2\_21, CarolAnn\_21, CheeseSpider\_25, CheeseTouch\_23, Clown\_45, Delian\_21, Fenry\_20, Frokostdame\_21, Gambino\_23, Getalong\_24, Guacamole\_21, Hitter\_21, Holliday\_23, Jablanski\_24, Jalammah\_23, JasperJr\_21, JuJu\_21, Kamaru\_23, Kenna\_22, Kuwabara\_22, Lutum\_23, Lysidious\_22, MakCheese\_27, Malachai\_22, Malisha\_24, Melba\_21, Mellie\_20, MintFen\_21, MissRona\_23, MortyNRick\_22, Murp\_22, Obliviate\_20, PantheRoc\_21, Periwinkle\_25, PhrostedPhlake\_23, Pipp\_21, Posh\_24, Pytheas\_24, Ruthy\_25, Samba\_21, ShawBrad\_23, Sidious\_21, Spooky\_23, Sprinklemunch\_25, Squiddly\_25, ThankyouJordi\_20, UmaThurman\_21, Utz\_21, Walrus\_23, WelcomeAyanna\_20, Whitney\_24, William\_21, Wisp\_20, Wrigley\_24, Yeezy\_22, Zarbodnamra\_21, ZiggyZoo\_20, Zilla\_21, Zodiariah\_25,

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

- 

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

- Agatha\_21, AikoCarson\_20, AksarBAT\_42, Amok\_20, AnarQue\_44, AndPeggy\_20, Axym\_21, Azira\_23, Balloona\_20, Bavidard\_21, BigChungus\_20, BillDoor\_23, Biskit\_22, Blackpen\_44, Blondies\_22, Bubble\_21, Burnsey\_21, Button\_22, Buttrmilkdreams\_21, CaiB\_44, CanesSauce\_21, CaramellLatte\_21, Carsonalex\_22, CherryonLim\_22, ChickenTender\_23, ChocoMunchkin\_21, Cleo\_21, CloverMinnie\_44, CocoaPuff\_20, Cozz\_21, DonkeyMan\_21, Dre3\_21, ElJefes\_20, Elinal\_22, Elliott\_21, Emalyn\_20, Feastonyeet\_20, FelixTres\_44, Fribs8\_22, GTE2\_19, GiKK\_24, Gibbous\_21, GoldHunter\_22, Heinz\_22, Hexbug\_23, Hibiscus\_21, HippoPololi\_23, Horseradish\_22, Jamzy\_24, Jojo24\_21, KayGee\_21, Lauer\_20, MAnor\_21, MScarn\_23, MaVan\_23, MakoManhole\_44, Margaret\_24, Mayweather\_22, McDazzle\_20, MossRose\_44, MunkgeeRoachy\_21, NHagos\_42, Nibbles\_23, Nina\_22, Nodigi\_23, Orla\_23, Pons\_21, PotPie\_21, PsychoKiller\_21, Quasar\_21, RADical\_22, RSchmailzl\_22, RanchParmCat\_24, RedBaron\_22, Reyja\_22, Santhid\_21, SheckWes\_20, SketchMex\_20, Socotra\_22, Sopespian\_21, Starburst\_22, SteamedHams\_23, SummitAcademy\_20, Survivors\_23, SweatNTears\_23, Tarzan\_21, Tolls\_23, TraderJ\_44, Troje\_21, Typhonmarchy\_21,

Vine\_22, Wolfwood\_25, Wooper\_44, Yakult\_22, Yarn\_20, Yeshua\_44, Yucky\_21, Yummy\_22, Zareef\_23,

### Summary by start number:

#### Start 41:

- Found in 50 of 175 ( 28.6% ) of genes in pham
- Manual Annotations of this start: 6 of 143
- Called 38.0% of time when present
- Phage (with cluster) where this start called: Azira\_23 (CT), Balloona\_20 (CT), Carsonalex\_22 (CT), CherryonLim\_22 (CT), ChickenTender\_23 (CT), Cleo\_21 (CT), CocoaPuff\_20 (CT), Elliott\_21 (CT), GoldHunter\_22 (CT), Lauer\_20 (CT), Nina\_22 (CT), PsychoKiller\_21 (CT), RADical\_22 (CT), RSchmailzl\_22 (CT), Socotra\_22 (CT), Sopespian\_21 (CT), Starburst\_22 (CT), Wolfwood\_25 (CT), Zareef\_23 (CT),

#### Start 42:

- Found in 20 of 175 ( 11.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.0% of time when present
- Phage (with cluster) where this start called: RedBaron\_22 (CT),

#### Start 43:

- Found in 45 of 175 ( 25.7% ) of genes in pham
- Manual Annotations of this start: 4 of 143
- Called 13.3% of time when present
- Phage (with cluster) where this start called: Axym\_21 (CT), Bavidard\_21 (CT), BigChungus\_20 (CT), Cozz\_21 (CT), Feastonyeet\_20 (CT), McDazzle\_20 (CT),

#### Start 44:

- Found in 68 of 175 ( 38.9% ) of genes in pham
- Manual Annotations of this start: 41 of 143
- Called 61.8% of time when present
- Phage (with cluster) where this start called: Agatha\_21 (CT), Biskit\_22 (CT), Blondies\_22 (CT), Bubble\_21 (CT), Burnsey\_21 (CT), Button\_22 (CT), Buttrmlkdreams\_21 (CT), Dre3\_21 (CT), ElJefes\_20 (CT), Elinal\_22 (CT), Fribs8\_22 (CT), GiKK\_24 (CT), Gibbous\_21 (CT), Hexbug\_23 (CT), HippoPololi\_23 (CT), Horseradish\_22 (CT), Jamzy\_24 (CT), KayGee\_21 (CT), MAnor\_21 (CT), MScarn\_23 (CT), MaVan\_23 (CT), Margaret\_24 (CT), Mayweather\_22 (CT), MunkgeeRoachy\_21 (CT), Nibbles\_23 (CT), Nodigi\_23 (CT), Orla\_23 (CT), Pons\_21 (CT), PotPie\_21 (CT), Quasar\_21 (CT), RanchParmCat\_24 (CT), SheckWes\_20 (CT), SketchMex\_20 (CT), SummitAcademy\_20 (CT), Survivors\_23 (CT), SweatNTears\_23 (CT), Troje\_21 (CT), Typhonomachy\_21 (CT), Vine\_22 (CT), Yakult\_22 (CT), Yucky\_21 (CT), Yummy\_22 (CT),

#### Start 45:

- Found in 76 of 175 ( 43.4% ) of genes in pham
- Manual Annotations of this start: 70 of 143
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agueybana\_21 (CZ1), Angelique\_23 (CY1), ArchiDore\_25 (DW), Archis\_22 (CV), Asapag\_23 (DN1), Azula\_23 (CV), BENTherdunthat\_23 (DN1), Barco\_21 (CV), BaxterFox\_20 (CZ3), BearBQ\_22 (DN), Begonia\_22 (CV), Birdsong\_22 (DN), BlingBling\_21 (CV), Blino\_21 (CV), Blueberry\_23 (CV), BotCity\_23 (DN), Budski\_23 (DN), CaptainKirk2\_21 (CV),

CarolAnn\_21 (CV), CheeseSpider\_25 (CV), CheeseTouch\_23 (DN1), Clown\_45 (DC2), Delian\_21 (CV), Fenry\_20 (CV), Frokostdame\_21 (CV), Gambino\_23 (CV), Getalong\_24 (DN1), Guacamole\_21 (CV), Hitter\_21 (CV), Holliday\_23 (DN1), Jablanski\_24 (CY3), Jalammah\_23 (CV), JasperJr\_21 (CV), JuJu\_21 (CV), Kamaru\_23 (DN1), Kenna\_22 (DN1), Kuwabara\_22 (DN4), Lutum\_23 (DN1), Lysidious\_22 (CV), MakCheese\_27 (DW), Malachai\_22 (CV), Malisha\_24 (DN), Melba\_21 (CV), Mellie\_20 (CV), MintFen\_21 (CV), MissRona\_23 (CV), MortyNRick\_22 (DN), Murp\_22 (CV), Obliviate\_20 (CV), PantheRoc\_21 (CZ3), Periwinkle\_25 (DN1), PhrostedPhlake\_23 (CV), Pipp\_21 (CV), Posh\_24 (CY4), Pytheas\_24 (CY3), Ruthy\_25 (DW), Samba\_21 (CV), ShawBrad\_23 (DN1), Sidious\_21 (CZ7), Spooky\_23 (DN2), Sprinklemunch\_25 (DW), Squiddly\_25 (DN2), ThankyouJordi\_20 (CZ1), UmaThurman\_21 (CV), Utz\_21 (CV), Walrus\_23 (CV), WelcomeAyanna\_20 (CZ1), Whitney\_24 (DN1), William\_21 (CV), Wisp\_20 (CV), Wrigley\_24 (CY4), Yeezy\_22 (CZ3), Zarbodnamra\_21 (CV), ZiggyZoo\_20 (CV), Zilla\_21 (CV), Zodiariah\_25 (DW),

#### Start 46:

- Found in 12 of 175 ( 6.9% ) of genes in pham
- Manual Annotations of this start: 8 of 143
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AikoCarson\_20 (CT), Amok\_20 (CT), AndPeggy\_20 (CT), BillDoor\_23 (CT), CanesSauce\_21 (CT), CaramelLatte\_21 (CT), ChocoMunchkin\_21 (CT), Emalyn\_20 (CT), GTE2\_19 (CT), SteamedHams\_23 (CT), Tolls\_23 (CT), Yarn\_20 (CT),

#### Start 47:

- Found in 19 of 175 ( 10.9% ) of genes in pham
- Manual Annotations of this start: 14 of 143
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AksarBAT\_42 (DR), AnarQue\_44 (DR), Blackpen\_44 (DR), CaiB\_44 (DR), CloverMinnie\_44 (DR), DonkeyMan\_21 (DY), FelixTres\_44 (DR), Heinz\_22 (DY), Hibiscus\_21 (DY), Jojo24\_21 (DY), MakoManhole\_44 (DR), MossRose\_44 (DR), NHagos\_42 (DR), Reyja\_22 (DY), Santhid\_21 (DY), Tarzan\_21 (DY), TraderJ\_44 (DR), Wooper\_44 (DR), Yeshua\_44 (DR),

### Summary by clusters:

There are 16 clusters represented in this pham: DN, CY3, CY1, DN4, CY4, CZ3, DC2, CZ1, CZ7, DN2, DN1, DY, DW, DR, CV, CT,

#### Info for manual annotations of cluster CT:

- Start number 41 was manually annotated 6 times for cluster CT.
- Start number 43 was manually annotated 4 times for cluster CT.
- Start number 44 was manually annotated 41 times for cluster CT.
- Start number 46 was manually annotated 8 times for cluster CT.

#### Info for manual annotations of cluster CV:

- Start number 45 was manually annotated 35 times for cluster CV.

#### Info for manual annotations of cluster CY1:

- Start number 45 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CY3:

- Start number 45 was manually annotated 2 times for cluster CY3.

Info for manual annotations of cluster CY4:

- Start number 45 was manually annotated 2 times for cluster CY4.

Info for manual annotations of cluster CZ1:

- Start number 45 was manually annotated 3 times for cluster CZ1.

Info for manual annotations of cluster CZ3:

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

Info for manual annotations of cluster CZ7:

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

Info for manual annotations of cluster DC2:

- Start number 45 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DN:

- Start number 45 was manually annotated 6 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 45 was manually annotated 10 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 45 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DN4:

- Start number 45 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DR:

- Start number 47 was manually annotated 8 times for cluster DR.

Info for manual annotations of cluster DW:

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

Info for manual annotations of cluster DY:

- Start number 47 was manually annotated 6 times for cluster DY.

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

Gene: Agatha\_21 Start: 18406, Stop: 19365, Start Num: 44

Candidate Starts for Agatha\_21:

(Start: 41 @18397 has 6 MA's), (42, 18400), (Start: 43 @18403 has 4 MA's), (Start: 44 @18406 has 41 MA's), (50, 18451), (54, 18517), (55, 18523), (65, 18634), (68, 18667), (71, 18679), (73, 18688), (77, 18745), (80, 18784), (91, 18883), (94, 18913), (99, 18973), (102, 19000), (109, 19051), (118, 19111), (119, 19114), (122, 19129), (123, 19138), (126, 19192), (137, 19285), (139, 19294), (150, 19348),

Gene: Agueybana\_21 Start: 20174, Stop: 21085, Start Num: 45

Candidate Starts for Agueybana\_21:

(2, 19433), (8, 19514), (10, 19523), (11, 19538), (13, 19610), (18, 19676), (21, 19754), (34, 20066), (Start: 45 @20174 has 70 MA's), (51, 20240), (56, 20297), (69, 20435), (71, 20441), (73, 20450), (79, 20543), (80, 20558), (85, 20615), (88, 20627), (98, 20702), (110, 20795), (115, 20813), (144, 21053),

Gene: AikoCarson\_20 Start: 17729, Stop: 18682, Start Num: 46

Candidate Starts for AikoCarson\_20:

(Start: 46 @17729 has 8 MA's), (59, 17873), (65, 17957), (71, 18002), (73, 18011), (76, 18056), (82, 18149), (87, 18176), (91, 18206), (94, 18236), (105, 18350), (109, 18374), (119, 18437), (122, 18452), (126, 18515), (137, 18614), (139, 18623),

Gene: AksarBAT\_42 Start: 35139, Stop: 36161, Start Num: 47

Candidate Starts for AksarBAT\_42:

(Start: 47 @35139 has 14 MA's), (49, 35181), (51, 35208), (55, 35256), (62, 35310), (65, 35367), (71, 35412), (73, 35421), (74, 35454), (77, 35478), (80, 35517), (81, 35538), (82, 35559), (90, 35607), (93, 35631), (94, 35643), (96, 35655), (100, 35709), (102, 35730), (103, 35736), (104, 35754), (108, 35781), (109, 35790), (128, 35955), (129, 35958), (144, 36069), (147, 36078),

Gene: Amok\_20 Start: 17726, Stop: 18679, Start Num: 46

Candidate Starts for Amok\_20:

(Start: 46 @17726 has 8 MA's), (59, 17870), (61, 17888), (65, 17954), (71, 17999), (73, 18008), (76, 18053), (82, 18146), (87, 18173), (91, 18203), (94, 18233), (105, 18347), (109, 18371), (119, 18434), (122, 18449), (126, 18512), (137, 18611), (139, 18620),

Gene: AnarQue\_44 Start: 36551, Stop: 37570, Start Num: 47

Candidate Starts for AnarQue\_44:

(Start: 47 @36551 has 14 MA's), (49, 36590), (55, 36665), (62, 36719), (65, 36776), (71, 36821), (74, 36863), (77, 36887), (80, 36926), (81, 36947), (82, 36968), (87, 36995), (93, 37040), (94, 37052), (96, 37064), (100, 37118), (102, 37139), (103, 37145), (104, 37163), (108, 37190), (109, 37199), (128, 37364), (129, 37367), (131, 37379), (144, 37478), (147, 37487), (152, 37523),

Gene: AndPeggy\_20 Start: 18098, Stop: 19048, Start Num: 46

Candidate Starts for AndPeggy\_20:

(Start: 46 @18098 has 8 MA's), (59, 18242), (61, 18260), (65, 18326), (68, 18359), (71, 18371), (73, 18380), (76, 18425), (80, 18476), (81, 18497), (82, 18518), (91, 18575), (94, 18605), (102, 18692), (105, 18719), (109, 18743), (119, 18806), (126, 18884), (129, 18899), (130, 18908), (136, 18953), (137, 18983), (139, 18992),

Gene: Angelique\_23 Start: 20524, Stop: 21435, Start Num: 45

Candidate Starts for Angelique\_23:

(34, 20413), (Start: 45 @20524 has 70 MA's), (50, 20566), (51, 20590), (66, 20752), (69, 20785), (71, 20791), (80, 20908), (88, 20977), (89, 20992), (98, 21052), (110, 21145), (114, 21157), (144, 21403),

Gene: ArchiDore\_25 Start: 22305, Stop: 23216, Start Num: 45

Candidate Starts for ArchiDore\_25:

(18, 21804), (34, 22194), (37, 22233), (Start: 45 @22305 has 70 MA's), (51, 22371), (65, 22530), (69, 22566), (71, 22572), (78, 22662), (80, 22689), (88, 22758), (98, 22833), (110, 22926), (144, 23184),

Gene: Archis\_22 Start: 19231, Stop: 20142, Start Num: 45

Candidate Starts for Archis\_22:

(Start: 45 @19231 has 70 MA's), (51, 19297), (65, 19456), (69, 19492), (71, 19498), (80, 19615), (88, 19684), (98, 19759), (110, 19852), (114, 19864), (144, 20110),

Gene: Asapag\_23 Start: 19217, Stop: 20194, Start Num: 45

Candidate Starts for Asapag\_23:

(32, 19061), (35, 19133), (36, 19136), (Start: 45 @19217 has 70 MA's), (48, 19238), (51, 19283), (52, 19313), (58, 19352), (62, 19385), (64, 19430), (65, 19442), (69, 19478), (71, 19484), (78, 19574), (80, 19601), (88, 19670), (110, 19841), (131, 20021), (136, 20066), (137, 20102), (138, 20108),

Gene: Axym\_21 Start: 18403, Stop: 19365, Start Num: 43

Candidate Starts for Axym\_21:

(Start: 41 @18397 has 6 MA's), (42, 18400), (Start: 43 @18403 has 4 MA's), (Start: 44 @18406 has 41 MA's), (50, 18451), (54, 18517), (55, 18523), (65, 18634), (68, 18667), (71, 18679), (73, 18688), (77, 18745), (80, 18784), (91, 18883), (94, 18913), (99, 18973), (102, 19000), (109, 19051), (118, 19111), (119, 19114), (122, 19129), (123, 19138), (126, 19192), (137, 19285), (139, 19294), (150, 19348),

Gene: Azira\_23 Start: 19360, Stop: 20337, Start Num: 41

Candidate Starts for Azira\_23:

(Start: 41 @19360 has 6 MA's), (Start: 43 @19366 has 4 MA's), (Start: 44 @19369 has 41 MA's), (48, 19387), (50, 19411), (59, 19510), (71, 19639), (72, 19642), (73, 19648), (77, 19705), (80, 19744), (81, 19765), (91, 19843), (95, 19876), (96, 19885), (110, 20014), (113, 20023), (116, 20044), (122, 20092), (126, 20155), (129, 20170), (135, 20212),

Gene: Azula\_23 Start: 19335, Stop: 20246, Start Num: 45

Candidate Starts for Azula\_23:

(Start: 45 @19335 has 70 MA's), (51, 19401), (62, 19503), (65, 19560), (69, 19596), (71, 19602), (80, 19719), (88, 19788), (98, 19863), (110, 19956), (144, 20214),

Gene: BENtherdunthat\_23 Start: 19217, Stop: 20194, Start Num: 45

Candidate Starts for BENtherdunthat\_23:

(27, 18941), (32, 19061), (35, 19133), (36, 19136), (Start: 45 @19217 has 70 MA's), (48, 19238), (51, 19283), (52, 19313), (58, 19352), (62, 19385), (64, 19430), (65, 19442), (69, 19478), (71, 19484), (78, 19574), (80, 19601), (88, 19670), (110, 19841), (128, 20006), (131, 20021), (137, 20102), (138, 20108),

Gene: Balloona\_20 Start: 18083, Stop: 19057, Start Num: 41

Candidate Starts for Balloona\_20:

(Start: 41 @18083 has 6 MA's), (Start: 43 @18089 has 4 MA's), (Start: 44 @18092 has 41 MA's), (52, 18191), (63, 18257), (70, 18353), (71, 18356), (86, 18539), (91, 18572), (101, 18674), (104, 18713), (106, 18722), (110, 18740), (116, 18770), (117, 18791), (126, 18881), (127, 18884), (139, 18983), (146, 19007), (147, 19010),

Gene: Barco\_21 Start: 19020, Stop: 19931, Start Num: 45

Candidate Starts for Barco\_21:

(Start: 45 @19020 has 70 MA's), (51, 19086), (65, 19245), (69, 19281), (71, 19287), (80, 19404), (88, 19473), (98, 19548), (110, 19641), (114, 19653), (144, 19899),

Gene: Bavilard\_21 Start: 18871, Stop: 19842, Start Num: 43

Candidate Starts for Bavilard\_21:

(Start: 41 @18865 has 6 MA's), (Start: 43 @18871 has 4 MA's), (Start: 44 @18874 has 41 MA's), (52, 18973), (63, 19039), (70, 19135), (71, 19138), (86, 19321), (91, 19354), (101, 19456), (104, 19495), (106, 19504), (110, 19522), (116, 19552), (117, 19573), (126, 19663), (127, 19666), (134, 19714), (139, 19765), (146, 19789), (147, 19792),

Gene: BaxterFox\_20 Start: 19500, Stop: 20411, Start Num: 45

Candidate Starts for BaxterFox\_20:

(8, 18840), (10, 18849), (11, 18864), (13, 18936), (18, 19002), (21, 19080), (34, 19392), (Start: 45 @19500 has 70 MA's), (51, 19566), (56, 19623), (69, 19761), (71, 19767), (73, 19776), (79, 19869), (80, 19884), (85, 19941), (88, 19953), (98, 20028), (110, 20121), (144, 20379),

Gene: BearBQ\_22 Start: 20057, Stop: 21034, Start Num: 45

Candidate Starts for BearBQ\_22:

(27, 19781), (32, 19901), (35, 19973), (36, 19976), (Start: 45 @20057 has 70 MA's), (48, 20078), (51, 20123), (52, 20153), (58, 20192), (62, 20225), (64, 20270), (65, 20282), (69, 20318), (71, 20324), (78, 20414), (80, 20441), (88, 20510), (110, 20681), (128, 20846), (131, 20861), (137, 20942), (138, 20948),

Gene: Begonia\_22 Start: 19498, Stop: 20412, Start Num: 45

Candidate Starts for Begonia\_22:

(Start: 45 @19498 has 70 MA's), (51, 19564), (65, 19723), (69, 19759), (71, 19765), (80, 19882), (88, 19951), (98, 20026), (110, 20119), (144, 20380),

Gene: BigChungus\_20 Start: 18129, Stop: 19100, Start Num: 43

Candidate Starts for BigChungus\_20:

(Start: 41 @18123 has 6 MA's), (Start: 43 @18129 has 4 MA's), (Start: 44 @18132 has 41 MA's), (52, 18231), (63, 18297), (70, 18393), (71, 18396), (86, 18579), (91, 18612), (101, 18714), (104, 18753), (106, 18762), (110, 18783), (117, 18834), (122, 18861), (126, 18924), (127, 18927), (139, 19026), (146, 19050), (147, 19053),

Gene: BillDoor\_23 Start: 18066, Stop: 19016, Start Num: 46

Candidate Starts for BillDoor\_23:

(Start: 46 @18066 has 8 MA's), (59, 18210), (61, 18228), (65, 18294), (68, 18327), (71, 18339), (73, 18348), (76, 18393), (80, 18444), (81, 18465), (82, 18486), (91, 18543), (94, 18573), (102, 18660), (109, 18711), (119, 18774), (126, 18852), (129, 18867), (130, 18876), (136, 18921), (137, 18951), (139, 18960),

Gene: Birdsong\_22 Start: 18950, Stop: 19927, Start Num: 45

Candidate Starts for Birdsong\_22:

(27, 18674), (32, 18794), (35, 18866), (36, 18869), (Start: 45 @18950 has 70 MA's), (48, 18971), (51, 19016), (52, 19046), (58, 19085), (62, 19118), (64, 19163), (65, 19175), (69, 19211), (71, 19217), (78, 19307), (80, 19334), (88, 19403), (110, 19574), (128, 19739), (131, 19754), (137, 19835), (138, 19841),

Gene: Biskit\_22 Start: 18077, Stop: 19039, Start Num: 44

Candidate Starts for Biskit\_22:

(Start: 44 @18077 has 41 MA's), (55, 18194), (59, 18221), (65, 18305), (71, 18350), (73, 18359), (76, 18404), (80, 18455), (91, 18554), (94, 18584), (110, 18725), (118, 18785), (119, 18788), (122, 18803), (126, 18866), (137, 18959), (139, 18968),

Gene: Blackpen\_44 Start: 35969, Stop: 36988, Start Num: 47

Candidate Starts for Blackpen\_44:

(4, 35252), (6, 35285), (7, 35288), (14, 35435), (16, 35459), (20, 35543), (24, 35594), (26, 35678), (39, 35915), (Start: 47 @35969 has 14 MA's), (49, 36008), (55, 36083), (62, 36137), (65, 36194), (71, 36239), (74, 36281), (77, 36305), (80, 36344), (81, 36365), (82, 36386), (87, 36413), (93, 36458), (94, 36470), (96, 36482), (100, 36536), (102, 36557), (103, 36563), (104, 36581), (108, 36608), (109, 36617), (128, 36782), (129, 36785), (131, 36797), (144, 36896), (147, 36905), (152, 36941),

Gene: BlingBling\_21 Start: 19020, Stop: 19931, Start Num: 45

Candidate Starts for BlingBling\_21:

(Start: 45 @19020 has 70 MA's), (51, 19086), (65, 19245), (69, 19281), (71, 19287), (80, 19404), (88, 19473), (98, 19548), (110, 19641), (114, 19653), (144, 19899),

Gene: Blino\_21 Start: 18988, Stop: 19899, Start Num: 45

Candidate Starts for Blino\_21:

(Start: 45 @18988 has 70 MA's), (51, 19054), (69, 19249), (71, 19255), (80, 19372), (88, 19441), (98, 19516), (110, 19609), (114, 19621), (144, 19867),

Gene: Blondies\_22 Start: 18060, Stop: 19022, Start Num: 44

Candidate Starts for Blondies\_22:

(Start: 44 @18060 has 41 MA's), (55, 18177), (59, 18204), (65, 18288), (71, 18333), (73, 18342), (76, 18387), (80, 18438), (91, 18537), (94, 18567), (110, 18708), (118, 18768), (119, 18771), (122, 18786), (126, 18849), (137, 18942), (139, 18951),

Gene: Blueberry\_23 Start: 19335, Stop: 20246, Start Num: 45

Candidate Starts for Blueberry\_23:

(Start: 45 @19335 has 70 MA's), (51, 19401), (62, 19503), (65, 19560), (69, 19596), (71, 19602), (80, 19719), (88, 19788), (98, 19863), (110, 19956), (144, 20214),

Gene: BotCity\_23 Start: 19215, Stop: 20192, Start Num: 45

Candidate Starts for BotCity\_23:

(32, 19059), (35, 19131), (36, 19134), (Start: 45 @19215 has 70 MA's), (48, 19236), (51, 19281), (52, 19311), (58, 19350), (62, 19383), (64, 19428), (65, 19440), (69, 19476), (71, 19482), (78, 19572), (80, 19599), (88, 19668), (110, 19839), (131, 20019), (136, 20064), (137, 20100), (138, 20106),

Gene: Bubble\_21 Start: 18406, Stop: 19365, Start Num: 44

Candidate Starts for Bubble\_21:

(Start: 41 @18397 has 6 MA's), (42, 18400), (Start: 43 @18403 has 4 MA's), (Start: 44 @18406 has 41 MA's), (50, 18451), (54, 18517), (55, 18523), (65, 18634), (68, 18667), (71, 18679), (73, 18688), (77, 18745), (80, 18784), (91, 18883), (94, 18913), (99, 18973), (109, 19051), (118, 19111), (119, 19114), (122, 19129), (123, 19138), (126, 19192), (137, 19285), (139, 19294), (150, 19348),

Gene: Budski\_23 Start: 19385, Stop: 20299, Start Num: 45

Candidate Starts for Budski\_23:

(Start: 45 @19385 has 70 MA's), (51, 19451), (65, 19610), (69, 19646), (71, 19652), (78, 19742), (80, 19769), (88, 19838), (98, 19913), (110, 20006), (121, 20075), (144, 20267),

Gene: Burnsey\_21 Start: 18407, Stop: 19366, Start Num: 44

Candidate Starts for Burnsey\_21:

(Start: 41 @18398 has 6 MA's), (42, 18401), (Start: 43 @18404 has 4 MA's), (Start: 44 @18407 has 41 MA's), (50, 18452), (54, 18518), (55, 18524), (65, 18635), (68, 18668), (71, 18680), (73, 18689), (77, 18746), (80, 18785), (91, 18884), (94, 18914), (99, 18974), (102, 19001), (109, 19052), (118, 19112), (119, 19115), (122, 19130), (123, 19139), (126, 19193), (137, 19286), (139, 19295), (150, 19349),

Gene: Button\_22 Start: 17436, Stop: 18404, Start Num: 44

Candidate Starts for Button\_22:

(Start: 44 @17436 has 41 MA's), (50, 17478), (51, 17502), (52, 17532), (57, 17568), (59, 17577), (64, 17649), (67, 17679), (71, 17706), (83, 17874), (91, 17925), (111, 18096), (117, 18141), (119, 18153), (126, 18222), (143, 18342), (148, 18369),

Gene: Buttrmlkdreams\_21 Start: 18059, Stop: 19021, Start Num: 44

Candidate Starts for Buttrmlkdreams\_21:

(Start: 44 @18059 has 41 MA's), (55, 18176), (59, 18203), (65, 18287), (71, 18332), (73, 18341), (76, 18386), (80, 18437), (91, 18536), (94, 18566), (110, 18707), (118, 18767), (119, 18770), (122, 18785), (126, 18848), (137, 18941), (139, 18950),

Gene: CaiB\_44 Start: 36537, Stop: 37556, Start Num: 47

Candidate Starts for CaiB\_44:

(4, 35820), (5, 35847), (6, 35853), (7, 35856), (14, 36003), (16, 36027), (20, 36111), (24, 36162), (26, 36246), (39, 36483), (Start: 47 @36537 has 14 MA's), (49, 36576), (55, 36651), (62, 36705), (65, 36762), (71, 36807), (74, 36849), (77, 36873), (80, 36912), (81, 36933), (82, 36954), (87, 36981), (93, 37026), (94, 37038), (96, 37050), (100, 37104), (102, 37125), (103, 37131), (104, 37149), (108, 37176), (109, 37185), (128, 37350), (129, 37353), (131, 37365), (144, 37464), (147, 37473), (152, 37509),

Gene: CanesSauce\_21 Start: 18099, Stop: 19049, Start Num: 46

Candidate Starts for CanesSauce\_21:

(Start: 46 @18099 has 8 MA's), (59, 18243), (61, 18261), (65, 18327), (68, 18360), (71, 18372), (73, 18381), (76, 18426), (80, 18477), (81, 18498), (82, 18519), (91, 18576), (94, 18606), (102, 18693), (109, 18744), (119, 18807), (126, 18885), (129, 18900), (130, 18909), (136, 18954), (137, 18984), (139, 18993),

Gene: CaptainKirk2\_21 Start: 19041, Stop: 19952, Start Num: 45

Candidate Starts for CaptainKirk2\_21:

(Start: 45 @19041 has 70 MA's), (51, 19107), (65, 19266), (69, 19302), (71, 19308), (80, 19425), (88, 19494), (98, 19569), (110, 19662), (144, 19920),

Gene: CaramellLatte\_21 Start: 18099, Stop: 19049, Start Num: 46

Candidate Starts for CaramellLatte\_21:

(Start: 46 @18099 has 8 MA's), (59, 18243), (61, 18261), (65, 18327), (68, 18360), (71, 18372), (73, 18381), (76, 18426), (80, 18477), (81, 18498), (82, 18519), (91, 18576), (94, 18606), (102, 18693), (109, 18744), (119, 18807), (126, 18885), (129, 18900), (130, 18909), (136, 18954), (137, 18984), (139, 18993),

Gene: CarolAnn\_21 Start: 18987, Stop: 19898, Start Num: 45

Candidate Starts for CarolAnn\_21:

(Start: 45 @18987 has 70 MA's), (51, 19053), (69, 19248), (71, 19254), (80, 19371), (88, 19440), (98, 19515), (110, 19608), (114, 19620), (144, 19866),

Gene: Carsonalex\_22 Start: 18455, Stop: 19423, Start Num: 41

Candidate Starts for Carsonalex\_22:

(Start: 41 @18455 has 6 MA's), (42, 18458), (Start: 43 @18461 has 4 MA's), (Start: 44 @18464 has 41 MA's), (50, 18509), (54, 18575), (55, 18581), (65, 18692), (68, 18725), (71, 18737), (73, 18746), (77, 18803), (80, 18842), (91, 18941), (94, 18971), (99, 19031), (102, 19058), (109, 19109), (118, 19169), (119, 19172), (122, 19187), (123, 19196), (126, 19250), (137, 19343), (139, 19352), (150, 19406),

Gene: CheeseSpider\_25 Start: 19586, Stop: 20497, Start Num: 45

Candidate Starts for CheeseSpider\_25:

(Start: 45 @19586 has 70 MA's), (49, 19625), (51, 19652), (65, 19811), (69, 19847), (71, 19853), (78, 19943), (80, 19970), (98, 20114), (110, 20207), (144, 20465),

Gene: CheeseTouch\_23 Start: 19211, Stop: 20188, Start Num: 45

Candidate Starts for CheeseTouch\_23:

(32, 19055), (Start: 45 @19211 has 70 MA's), (48, 19232), (51, 19277), (52, 19307), (58, 19346), (62, 19379), (65, 19436), (69, 19472), (71, 19478), (78, 19568), (80, 19595), (88, 19664), (110, 19835),

(131, 20015), (136, 20060), (137, 20096), (138, 20102),

Gene: CherryonLim\_22 Start: 18832, Stop: 19809, Start Num: 41

Candidate Starts for CherryonLim\_22:

(Start: 41 @18832 has 6 MA's), (Start: 43 @18838 has 4 MA's), (Start: 44 @18841 has 41 MA's), (52, 18940), (60, 18985), (63, 19006), (65, 19060), (70, 19102), (71, 19105), (86, 19288), (91, 19321), (101, 19423), (104, 19462), (106, 19471), (110, 19492), (117, 19543), (122, 19570), (126, 19633), (127, 19636), (139, 19735), (146, 19759), (147, 19762),

Gene: ChickenTender\_23 Start: 18462, Stop: 19430, Start Num: 41

Candidate Starts for ChickenTender\_23:

(Start: 41 @18462 has 6 MA's), (42, 18465), (Start: 43 @18468 has 4 MA's), (Start: 44 @18471 has 41 MA's), (50, 18516), (54, 18582), (55, 18588), (65, 18699), (68, 18732), (71, 18744), (73, 18753), (77, 18810), (80, 18849), (91, 18948), (94, 18978), (99, 19038), (102, 19065), (109, 19116), (118, 19176), (119, 19179), (122, 19194), (123, 19203), (126, 19257), (137, 19350), (139, 19359), (150, 19413),

Gene: ChocoMunchkin\_21 Start: 18099, Stop: 19049, Start Num: 46

Candidate Starts for ChocoMunchkin\_21:

(Start: 46 @18099 has 8 MA's), (59, 18243), (61, 18261), (65, 18327), (68, 18360), (71, 18372), (73, 18381), (76, 18426), (80, 18477), (81, 18498), (82, 18519), (91, 18576), (94, 18606), (102, 18693), (109, 18744), (119, 18807), (126, 18885), (129, 18900), (130, 18909), (136, 18954), (137, 18984), (139, 18993),

Gene: Cleo\_21 Start: 18673, Stop: 19674, Start Num: 41

Candidate Starts for Cleo\_21:

(Start: 41 @18673 has 6 MA's), (Start: 44 @18682 has 41 MA's), (48, 18703), (50, 18727), (59, 18826), (71, 18955), (72, 18958), (76, 19009), (77, 19021), (80, 19060), (81, 19081), (91, 19159), (110, 19330), (113, 19339), (116, 19360), (122, 19408), (126, 19471), (129, 19486), (135, 19528), (138, 19570),

Gene: CloverMinnie\_44 Start: 36477, Stop: 37496, Start Num: 47

Candidate Starts for CloverMinnie\_44:

(26, 36186), (39, 36423), (Start: 47 @36477 has 14 MA's), (49, 36516), (55, 36591), (62, 36645), (65, 36702), (71, 36747), (74, 36789), (77, 36813), (80, 36852), (81, 36873), (82, 36894), (87, 36921), (93, 36966), (94, 36978), (96, 36990), (100, 37044), (102, 37065), (103, 37071), (104, 37089), (108, 37116), (109, 37125), (128, 37290), (129, 37293), (131, 37305), (144, 37404), (147, 37413), (152, 37449),

Gene: Clown\_45 Start: 36252, Stop: 37166, Start Num: 45

Candidate Starts for Clown\_45:

(34, 36141), (Start: 45 @36252 has 70 MA's), (51, 36318), (52, 36348), (61, 36411), (69, 36513), (71, 36519), (75, 36582), (78, 36609), (79, 36621), (80, 36636), (87, 36702), (98, 36780), (110, 36873), (121, 36942), (144, 37134),

Gene: CocoaPuff\_20 Start: 18077, Stop: 19054, Start Num: 41

Candidate Starts for CocoaPuff\_20:

(Start: 41 @18077 has 6 MA's), (Start: 43 @18083 has 4 MA's), (Start: 44 @18086 has 41 MA's), (52, 18185), (63, 18251), (70, 18347), (71, 18350), (78, 18440), (86, 18533), (91, 18566), (101, 18668), (104, 18707), (106, 18716), (110, 18734), (116, 18764), (117, 18785), (122, 18812), (126, 18875), (127, 18878), (139, 18977), (146, 19001), (147, 19004),

Gene: Cozz\_21 Start: 18404, Stop: 19366, Start Num: 43

Candidate Starts for Cozz\_21:

(Start: 41 @18398 has 6 MA's), (42, 18401), (Start: 43 @18404 has 4 MA's), (Start: 44 @18407 has 41 MA's), (50, 18452), (54, 18518), (55, 18524), (65, 18635), (68, 18668), (71, 18680), (73, 18689), (77, 18746), (80, 18785), (91, 18884), (94, 18914), (99, 18974), (102, 19001), (109, 19052), (118, 19112), (119, 19115), (122, 19130), (123, 19139), (126, 19193), (137, 19286), (139, 19295), (150, 19349),

Gene: Delian\_21 Start: 19041, Stop: 19952, Start Num: 45

Candidate Starts for Delian\_21:

(Start: 45 @19041 has 70 MA's), (51, 19107), (65, 19266), (69, 19302), (71, 19308), (80, 19425), (88, 19494), (98, 19569), (110, 19662), (144, 19920),

Gene: DonkeyMan\_21 Start: 17562, Stop: 18572, Start Num: 47

Candidate Starts for DonkeyMan\_21:

(Start: 47 @17562 has 14 MA's), (51, 17628), (59, 17703), (71, 17832), (85, 17997), (92, 18039), (93, 18051), (94, 18063), (96, 18075), (107, 18198), (120, 18297), (124, 18324), (126, 18381), (130, 18405), (131, 18408), (143, 18507), (145, 18516),

Gene: Dre3\_21 Start: 18629, Stop: 19600, Start Num: 44

Candidate Starts for Dre3\_21:

(Start: 41 @18620 has 6 MA's), (Start: 44 @18629 has 41 MA's), (48, 18650), (50, 18674), (59, 18773), (71, 18902), (72, 18905), (76, 18956), (77, 18968), (80, 19007), (81, 19028), (91, 19106), (110, 19277), (113, 19286), (116, 19307), (122, 19355), (126, 19418), (129, 19433), (135, 19475),

Gene: ElJefes\_20 Start: 18564, Stop: 19532, Start Num: 44

Candidate Starts for ElJefes\_20:

(Start: 41 @18555 has 6 MA's), (Start: 43 @18561 has 4 MA's), (Start: 44 @18564 has 41 MA's), (52, 18663), (60, 18708), (63, 18729), (70, 18825), (71, 18828), (86, 19011), (91, 19044), (101, 19146), (104, 19185), (106, 19194), (110, 19215), (117, 19266), (122, 19293), (126, 19356), (127, 19359), (146, 19482), (147, 19485),

Gene: Elinal\_22 Start: 18085, Stop: 19053, Start Num: 44

Candidate Starts for Elinal\_22:

(Start: 41 @18076 has 6 MA's), (Start: 43 @18082 has 4 MA's), (Start: 44 @18085 has 41 MA's), (52, 18184), (63, 18250), (70, 18346), (71, 18349), (86, 18532), (91, 18565), (101, 18667), (104, 18706), (106, 18715), (110, 18733), (116, 18763), (117, 18784), (126, 18874), (127, 18877), (139, 18976), (146, 19000), (147, 19003),

Gene: Elliott\_21 Start: 18397, Stop: 19365, Start Num: 41

Candidate Starts for Elliott\_21:

(Start: 41 @18397 has 6 MA's), (42, 18400), (Start: 43 @18403 has 4 MA's), (Start: 44 @18406 has 41 MA's), (50, 18451), (54, 18517), (55, 18523), (65, 18634), (68, 18667), (71, 18679), (73, 18688), (77, 18745), (80, 18784), (91, 18883), (94, 18913), (99, 18973), (102, 19000), (109, 19051), (118, 19111), (119, 19114), (122, 19129), (123, 19138), (126, 19192), (137, 19285), (139, 19294), (150, 19348),

Gene: Emalyn\_20 Start: 17725, Stop: 18675, Start Num: 46

Candidate Starts for Emalyn\_20:

(Start: 46 @17725 has 8 MA's), (59, 17869), (65, 17953), (71, 17998), (73, 18007), (76, 18052), (82, 18145), (87, 18172), (91, 18202), (94, 18232), (105, 18346), (109, 18370), (119, 18433), (122, 18448), (126, 18511), (129, 18526), (130, 18535), (136, 18580), (137, 18610),

Gene: Feastonyeet\_20 Start: 18129, Stop: 19100, Start Num: 43

Candidate Starts for Feastonyeet\_20:

(Start: 41 @18123 has 6 MA's), (Start: 43 @18129 has 4 MA's), (Start: 44 @18132 has 41 MA's), (52, 18231), (63, 18297), (70, 18393), (71, 18396), (86, 18579), (91, 18612), (101, 18714), (104, 18753),

(106, 18762), (110, 18783), (117, 18834), (122, 18861), (126, 18924), (127, 18927), (139, 19026), (146, 19050), (147, 19053),

Gene: FelixTres\_44 Start: 36540, Stop: 37559, Start Num: 47

Candidate Starts for FelixTres\_44:

(26, 36249), (39, 36486), (Start: 47 @36540 has 14 MA's), (49, 36579), (55, 36654), (62, 36708), (65, 36765), (71, 36810), (74, 36852), (77, 36876), (80, 36915), (81, 36936), (82, 36957), (87, 36984), (93, 37029), (94, 37041), (96, 37053), (100, 37107), (102, 37128), (103, 37134), (104, 37152), (108, 37179), (109, 37188), (128, 37353), (129, 37356), (131, 37368), (144, 37467), (147, 37476), (152, 37512),

Gene: Fenry\_20 Start: 18739, Stop: 19650, Start Num: 45

Candidate Starts for Fenry\_20:

(Start: 45 @18739 has 70 MA's), (51, 18805), (69, 19000), (71, 19006), (80, 19123), (88, 19192), (98, 19267), (110, 19360), (144, 19618),

Gene: Fribs8\_22 Start: 19213, Stop: 20184, Start Num: 44

Candidate Starts for Fribs8\_22:

(Start: 41 @19204 has 6 MA's), (Start: 44 @19213 has 41 MA's), (59, 19354), (71, 19483), (72, 19486), (73, 19492), (77, 19549), (80, 19588), (81, 19609), (82, 19630), (91, 19687), (95, 19720), (110, 19858), (113, 19867), (116, 19888), (122, 19936), (126, 19999), (129, 20014), (135, 20056), (141, 20107),

Gene: Frokostdame\_21 Start: 18989, Stop: 19900, Start Num: 45

Candidate Starts for Frokostdame\_21:

(Start: 45 @18989 has 70 MA's), (51, 19055), (65, 19214), (69, 19250), (71, 19256), (80, 19373), (88, 19442), (98, 19517), (110, 19610), (144, 19868),

Gene: GTE2\_19 Start: 17772, Stop: 18722, Start Num: 46

Candidate Starts for GTE2\_19:

(Start: 46 @17772 has 8 MA's), (59, 17916), (61, 17934), (65, 18000), (71, 18045), (73, 18054), (76, 18099), (80, 18150), (82, 18192), (91, 18249), (94, 18279), (102, 18366), (109, 18417), (119, 18480), (126, 18558), (129, 18573), (130, 18582), (136, 18627), (137, 18657), (139, 18666),

Gene: Gambino\_23 Start: 19335, Stop: 20246, Start Num: 45

Candidate Starts for Gambino\_23:

(Start: 45 @19335 has 70 MA's), (51, 19401), (62, 19503), (65, 19560), (69, 19596), (71, 19602), (80, 19719), (88, 19788), (98, 19863), (110, 19956), (144, 20214),

Gene: Getalong\_24 Start: 20017, Stop: 20994, Start Num: 45

Candidate Starts for Getalong\_24:

(32, 19861), (35, 19933), (36, 19936), (Start: 45 @20017 has 70 MA's), (48, 20038), (51, 20083), (52, 20113), (58, 20152), (62, 20185), (64, 20230), (65, 20242), (69, 20278), (71, 20284), (78, 20374), (80, 20401), (88, 20470), (110, 20641), (128, 20806), (131, 20821), (137, 20902), (138, 20908),

Gene: GiKK\_24 Start: 17739, Stop: 18707, Start Num: 44

Candidate Starts for GiKK\_24:

(Start: 44 @17739 has 41 MA's), (50, 17781), (51, 17805), (52, 17835), (57, 17871), (59, 17880), (65, 17964), (67, 17982), (69, 18003), (71, 18009), (83, 18177), (111, 18399), (117, 18444), (119, 18456), (126, 18525), (139, 18633), (143, 18645), (149, 18675),

Gene: Gibbous\_21 Start: 18629, Stop: 19600, Start Num: 44

Candidate Starts for Gibbous\_21:

(Start: 41 @18620 has 6 MA's), (Start: 44 @18629 has 41 MA's), (48, 18650), (50, 18674), (59, 18773), (71, 18902), (72, 18905), (76, 18956), (77, 18968), (80, 19007), (81, 19028), (91, 19106), (110, 19277), (113, 19286), (116, 19307), (122, 19355), (126, 19418), (129, 19433), (135, 19475),

Gene: GoldHunter\_22 Start: 18398, Stop: 19366, Start Num: 41

Candidate Starts for GoldHunter\_22:

(Start: 41 @18398 has 6 MA's), (42, 18401), (Start: 43 @18404 has 4 MA's), (Start: 44 @18407 has 41 MA's), (50, 18452), (54, 18518), (55, 18524), (65, 18635), (68, 18668), (71, 18680), (73, 18689), (77, 18746), (80, 18785), (91, 18884), (94, 18914), (99, 18974), (102, 19001), (109, 19052), (118, 19112), (119, 19115), (122, 19130), (123, 19139), (126, 19193), (137, 19286), (139, 19295), (150, 19349),

Gene: Guacamole\_21 Start: 19024, Stop: 19935, Start Num: 45

Candidate Starts for Guacamole\_21:

(Start: 45 @19024 has 70 MA's), (51, 19090), (65, 19249), (69, 19285), (71, 19291), (80, 19408), (88, 19477), (98, 19552), (110, 19645), (114, 19657), (144, 19903),

Gene: Heinz\_22 Start: 17654, Stop: 18664, Start Num: 47

Candidate Starts for Heinz\_22:

(14, 17117), (15, 17126), (16, 17141), (19, 17213), (25, 17279), (26, 17357), (Start: 47 @17654 has 14 MA's), (51, 17720), (59, 17795), (71, 17924), (85, 18089), (93, 18143), (94, 18155), (96, 18167), (103, 18248), (107, 18290), (120, 18389), (124, 18416), (126, 18473), (131, 18500), (132, 18509), (140, 18590), (142, 18596), (143, 18599), (145, 18608),

Gene: Hexbug\_23 Start: 18431, Stop: 19402, Start Num: 44

Candidate Starts for Hexbug\_23:

(12, 17843), (17, 17921), (26, 18137), (Start: 44 @18431 has 41 MA's), (50, 18476), (59, 18575), (64, 18647), (69, 18698), (71, 18704), (81, 18845), (83, 18872), (111, 19094), (117, 19139), (126, 19220), (131, 19247), (133, 19265),

Gene: Hibiscus\_21 Start: 17602, Stop: 18612, Start Num: 47

Candidate Starts for Hibiscus\_21:

(14, 17065), (15, 17074), (16, 17089), (19, 17161), (25, 17227), (26, 17305), (Start: 47 @17602 has 14 MA's), (51, 17668), (59, 17743), (71, 17872), (85, 18037), (93, 18091), (94, 18103), (96, 18115), (103, 18196), (107, 18238), (120, 18337), (124, 18364), (126, 18421), (131, 18448), (132, 18457), (140, 18538), (142, 18544), (143, 18547), (145, 18556),

Gene: HippoPololi\_23 Start: 19281, Stop: 20252, Start Num: 44

Candidate Starts for HippoPololi\_23:

(Start: 41 @19272 has 6 MA's), (Start: 44 @19281 has 41 MA's), (50, 19326), (53, 19389), (59, 19425), (71, 19554), (72, 19557), (77, 19620), (80, 19659), (81, 19680), (91, 19758), (96, 19800), (110, 19929), (113, 19938), (116, 19959), (117, 19980), (122, 20007), (126, 20070), (129, 20085), (135, 20127),

Gene: Hitter\_21 Start: 19020, Stop: 19931, Start Num: 45

Candidate Starts for Hitter\_21:

(Start: 45 @19020 has 70 MA's), (51, 19086), (65, 19245), (69, 19281), (71, 19287), (80, 19404), (88, 19473), (98, 19548), (110, 19641), (144, 19899),

Gene: Holliday\_23 Start: 19385, Stop: 20299, Start Num: 45

Candidate Starts for Holliday\_23:

(Start: 45 @19385 has 70 MA's), (51, 19451), (65, 19610), (69, 19646), (71, 19652), (78, 19742), (80, 19769), (88, 19838), (98, 19913), (110, 20006), (121, 20075), (144, 20267),

Gene: Horseradish\_22 Start: 17973, Stop: 18935, Start Num: 44

Candidate Starts for Horseradish\_22:

(Start: 44 @17973 has 41 MA's), (55, 18090), (59, 18117), (65, 18201), (71, 18246), (73, 18255), (76, 18300), (80, 18351), (91, 18450), (94, 18480), (110, 18621), (118, 18681), (119, 18684), (122, 18699), (126, 18762), (137, 18855), (139, 18864),

Gene: Jablanski\_24 Start: 20700, Stop: 21611, Start Num: 45

Candidate Starts for Jablanski\_24:

(Start: 45 @20700 has 70 MA's), (51, 20766), (65, 20925), (66, 20928), (69, 20961), (71, 20967), (80, 21084), (88, 21153), (98, 21228), (110, 21321), (144, 21579),

Gene: Jalammah\_23 Start: 19814, Stop: 20725, Start Num: 45

Candidate Starts for Jalammah\_23:

(Start: 45 @19814 has 70 MA's), (51, 19880), (65, 20039), (69, 20075), (71, 20081), (80, 20198), (88, 20267), (98, 20342), (110, 20435), (144, 20693),

Gene: Jamzy\_24 Start: 17749, Stop: 18717, Start Num: 44

Candidate Starts for Jamzy\_24:

(Start: 44 @17749 has 41 MA's), (50, 17791), (51, 17815), (52, 17845), (57, 17881), (59, 17890), (71, 18019), (83, 18187), (91, 18238), (111, 18409), (117, 18454), (119, 18466), (126, 18535), (143, 18655), (148, 18682),

Gene: JasperJr\_21 Start: 19024, Stop: 19935, Start Num: 45

Candidate Starts for JasperJr\_21:

(Start: 45 @19024 has 70 MA's), (51, 19090), (65, 19249), (69, 19285), (71, 19291), (80, 19408), (88, 19477), (98, 19552), (110, 19645), (114, 19657), (144, 19903),

Gene: Jojo24\_21 Start: 17599, Stop: 18609, Start Num: 47

Candidate Starts for Jojo24\_21:

(Start: 47 @17599 has 14 MA's), (51, 17665), (59, 17740), (71, 17869), (85, 18034), (93, 18088), (94, 18100), (96, 18112), (103, 18193), (107, 18235), (120, 18334), (124, 18361), (126, 18418), (131, 18445), (140, 18535), (143, 18544), (145, 18553),

Gene: JuJu\_21 Start: 18942, Stop: 19853, Start Num: 45

Candidate Starts for JuJu\_21:

(8, 18282), (10, 18291), (11, 18306), (13, 18378), (18, 18444), (34, 18834), (37, 18873), (Start: 45 @18942 has 70 MA's), (51, 19008), (65, 19167), (66, 19170), (69, 19203), (71, 19209), (78, 19299), (80, 19326), (88, 19395), (98, 19470), (110, 19563), (144, 19821),

Gene: Kamaru\_23 Start: 19385, Stop: 20299, Start Num: 45

Candidate Starts for Kamaru\_23:

(Start: 45 @19385 has 70 MA's), (51, 19451), (65, 19610), (69, 19646), (71, 19652), (78, 19742), (80, 19769), (88, 19838), (98, 19913), (110, 20006), (121, 20075), (144, 20267),

Gene: KayGee\_21 Start: 18085, Stop: 19053, Start Num: 44

Candidate Starts for KayGee\_21:

(Start: 41 @18076 has 6 MA's), (Start: 43 @18082 has 4 MA's), (Start: 44 @18085 has 41 MA's), (52, 18184), (63, 18250), (70, 18346), (71, 18349), (86, 18532), (91, 18565), (101, 18667), (104, 18706), (106, 18715), (110, 18733), (116, 18763), (117, 18784), (126, 18874), (127, 18877), (139, 18976), (146, 19000), (147, 19003),

Gene: Kenna\_22 Start: 19218, Stop: 20195, Start Num: 45

Candidate Starts for Kenna\_22:

(32, 19062), (Start: 45 @19218 has 70 MA's), (48, 19239), (51, 19284), (52, 19314), (58, 19353), (62, 19386), (65, 19443), (69, 19479), (71, 19485), (78, 19575), (80, 19602), (88, 19671), (110, 19842), (131, 20022), (136, 20067), (137, 20103), (138, 20109),

Gene: Kuwabara\_22 Start: 18644, Stop: 19621, Start Num: 45

Candidate Starts for Kuwabara\_22:

(27, 18368), (32, 18488), (35, 18560), (36, 18563), (Start: 45 @18644 has 70 MA's), (48, 18665), (51, 18710), (52, 18740), (58, 18779), (62, 18812), (64, 18857), (65, 18869), (69, 18905), (71, 18911), (78, 19001), (80, 19028), (88, 19097), (110, 19268), (128, 19433), (131, 19448), (137, 19529), (138, 19535),

Gene: Lauer\_20 Start: 18125, Stop: 19102, Start Num: 41

Candidate Starts for Lauer\_20:

(Start: 41 @18125 has 6 MA's), (Start: 43 @18131 has 4 MA's), (Start: 44 @18134 has 41 MA's), (52, 18233), (63, 18299), (67, 18371), (70, 18395), (71, 18398), (86, 18581), (91, 18614), (101, 18716), (104, 18755), (106, 18764), (110, 18782), (116, 18812), (117, 18833), (126, 18923), (127, 18926), (134, 18974), (139, 19025), (146, 19049), (147, 19052),

Gene: Lutum\_23 Start: 19218, Stop: 20195, Start Num: 45

Candidate Starts for Lutum\_23:

(32, 19062), (Start: 45 @19218 has 70 MA's), (48, 19239), (51, 19284), (52, 19314), (58, 19353), (62, 19386), (65, 19443), (69, 19479), (71, 19485), (78, 19575), (80, 19602), (88, 19671), (110, 19842), (131, 20022), (136, 20067), (137, 20103), (138, 20109),

Gene: Lysidious\_22 Start: 19544, Stop: 20455, Start Num: 45

Candidate Starts for Lysidious\_22:

(Start: 45 @19544 has 70 MA's), (51, 19610), (65, 19769), (69, 19805), (71, 19811), (80, 19928), (88, 19997), (98, 20072), (110, 20165), (144, 20423),

Gene: MAnor\_21 Start: 18096, Stop: 19067, Start Num: 44

Candidate Starts for MAnor\_21:

(Start: 41 @18087 has 6 MA's), (Start: 43 @18093 has 4 MA's), (Start: 44 @18096 has 41 MA's), (52, 18195), (63, 18261), (65, 18315), (70, 18357), (71, 18360), (86, 18543), (91, 18576), (101, 18678), (104, 18717), (106, 18726), (110, 18750), (116, 18780), (117, 18801), (126, 18891), (127, 18894), (139, 18993),

Gene: MScarn\_23 Start: 18062, Stop: 19024, Start Num: 44

Candidate Starts for MScarn\_23:

(Start: 44 @18062 has 41 MA's), (55, 18179), (59, 18206), (65, 18290), (71, 18335), (73, 18344), (76, 18389), (80, 18440), (91, 18539), (94, 18569), (110, 18710), (118, 18770), (119, 18773), (122, 18788), (126, 18851), (137, 18944), (139, 18953),

Gene: MaVan\_23 Start: 19369, Stop: 20337, Start Num: 44

Candidate Starts for MaVan\_23:

(Start: 41 @19360 has 6 MA's), (Start: 43 @19366 has 4 MA's), (Start: 44 @19369 has 41 MA's), (48, 19387), (50, 19411), (59, 19510), (71, 19639), (72, 19642), (73, 19648), (77, 19705), (80, 19744), (81, 19765), (91, 19843), (95, 19876), (96, 19885), (110, 20014), (113, 20023), (116, 20044), (122, 20092), (126, 20155), (129, 20170), (135, 20212),

Gene: MakCheese\_27 Start: 23638, Stop: 24627, Start Num: 45

Candidate Starts for MakCheese\_27:

(29, 23425), (33, 23497), (Start: 45 @23638 has 70 MA's), (52, 23734), (62, 23806), (69, 23899), (71, 23905), (80, 24022), (85, 24079), (88, 24091), (110, 24274), (128, 24439), (138, 24541), (151, 24601),

Gene: MakoManhole\_44 Start: 36555, Stop: 37574, Start Num: 47

Candidate Starts for MakoManhole\_44:

(26, 36264), (39, 36501), (Start: 47 @36555 has 14 MA's), (49, 36594), (55, 36669), (62, 36723), (65, 36780), (71, 36825), (74, 36867), (77, 36891), (80, 36930), (81, 36951), (82, 36972), (87, 36999), (93, 37044), (94, 37056), (96, 37068), (100, 37122), (102, 37143), (103, 37149), (104, 37167), (108, 37194), (109, 37203), (128, 37368), (129, 37371), (131, 37383), (144, 37482), (147, 37491), (152, 37527),

Gene: Malachai\_22 Start: 19498, Stop: 20412, Start Num: 45

Candidate Starts for Malachai\_22:

(Start: 45 @19498 has 70 MA's), (51, 19564), (65, 19723), (69, 19759), (71, 19765), (80, 19882), (88, 19951), (98, 20026), (110, 20119), (144, 20380),

Gene: Malisha\_24 Start: 21166, Stop: 22080, Start Num: 45

Candidate Starts for Malisha\_24:

(Start: 45 @21166 has 70 MA's), (51, 21232), (58, 21301), (65, 21391), (69, 21427), (71, 21433), (78, 21523), (80, 21550), (88, 21619), (98, 21694), (110, 21787), (121, 21856), (144, 22048),

Gene: Margaret\_24 Start: 18118, Stop: 19089, Start Num: 44

Candidate Starts for Margaret\_24:

(Start: 44 @18118 has 41 MA's), (50, 18163), (54, 18229), (59, 18262), (64, 18334), (69, 18385), (71, 18391), (78, 18481), (80, 18511), (111, 18781), (117, 18826), (119, 18838), (126, 18907), (131, 18934), (149, 19057),

Gene: Mayweather\_22 Start: 18711, Stop: 19682, Start Num: 44

Candidate Starts for Mayweather\_22:

(Start: 41 @18702 has 6 MA's), (Start: 43 @18708 has 4 MA's), (Start: 44 @18711 has 41 MA's), (52, 18810), (63, 18876), (65, 18930), (70, 18972), (71, 18975), (86, 19158), (91, 19191), (101, 19293), (104, 19332), (106, 19341), (110, 19365), (116, 19395), (117, 19416), (126, 19506), (127, 19509), (139, 19608),

Gene: McDazzle\_20 Start: 18555, Stop: 19526, Start Num: 43

Candidate Starts for McDazzle\_20:

(Start: 41 @18549 has 6 MA's), (Start: 43 @18555 has 4 MA's), (Start: 44 @18558 has 41 MA's), (52, 18657), (60, 18702), (63, 18723), (70, 18819), (71, 18822), (86, 19005), (91, 19038), (101, 19140), (104, 19179), (106, 19188), (110, 19209), (117, 19260), (122, 19287), (126, 19350), (127, 19353), (146, 19476), (147, 19479),

Gene: Melba\_21 Start: 19020, Stop: 19931, Start Num: 45

Candidate Starts for Melba\_21:

(Start: 45 @19020 has 70 MA's), (51, 19086), (65, 19245), (69, 19281), (71, 19287), (80, 19404), (88, 19473), (98, 19548), (110, 19641), (114, 19653), (144, 19899),

Gene: Mellie\_20 Start: 18781, Stop: 19692, Start Num: 45

Candidate Starts for Mellie\_20:

(Start: 45 @18781 has 70 MA's), (51, 18847), (65, 19006), (69, 19042), (71, 19048), (80, 19165), (88, 19234), (98, 19309), (110, 19402), (144, 19660),

Gene: MintFen\_21 Start: 19020, Stop: 19931, Start Num: 45

Candidate Starts for MintFen\_21:

(Start: 45 @19020 has 70 MA's), (51, 19086), (65, 19245), (69, 19281), (71, 19287), (80, 19404), (88, 19473), (98, 19548), (110, 19641), (114, 19653), (144, 19899),

Gene: MissRona\_23 Start: 19335, Stop: 20246, Start Num: 45

Candidate Starts for MissRona\_23:

(Start: 45 @19335 has 70 MA's), (51, 19401), (62, 19503), (65, 19560), (69, 19596), (71, 19602), (80, 19719), (88, 19788), (98, 19863), (110, 19956), (144, 20214),

Gene: MortyNRick\_22 Start: 18950, Stop: 19927, Start Num: 45

Candidate Starts for MortyNRick\_22:

(27, 18674), (32, 18794), (35, 18866), (36, 18869), (Start: 45 @18950 has 70 MA's), (48, 18971), (51, 19016), (52, 19046), (58, 19085), (62, 19118), (64, 19163), (65, 19175), (69, 19211), (71, 19217), (78, 19307), (80, 19334), (88, 19403), (110, 19574), (128, 19739), (131, 19754), (137, 19835), (138, 19841),

Gene: MossRose\_44 Start: 36534, Stop: 37553, Start Num: 47

Candidate Starts for MossRose\_44:

(3, 35796), (4, 35817), (5, 35844), (6, 35850), (7, 35853), (14, 36000), (16, 36024), (20, 36108), (22, 36117), (24, 36159), (26, 36243), (39, 36480), (Start: 47 @36534 has 14 MA's), (49, 36573), (62, 36702), (65, 36759), (71, 36804), (74, 36846), (77, 36870), (80, 36909), (81, 36930), (82, 36951), (84, 36963), (87, 36978), (93, 37023), (94, 37035), (96, 37047), (100, 37101), (102, 37122), (103, 37128), (104, 37146), (108, 37173), (109, 37182), (128, 37347), (129, 37350), (131, 37362), (144, 37461), (147, 37470), (152, 37506),

Gene: MunkgeeRoachy\_21 Start: 18454, Stop: 19413, Start Num: 44

Candidate Starts for MunkgeeRoachy\_21:

(Start: 41 @18445 has 6 MA's), (42, 18448), (Start: 43 @18451 has 4 MA's), (Start: 44 @18454 has 41 MA's), (50, 18499), (54, 18565), (55, 18571), (65, 18682), (68, 18715), (71, 18727), (73, 18736), (77, 18793), (80, 18832), (91, 18931), (94, 18961), (99, 19021), (102, 19048), (109, 19099), (118, 19159), (119, 19162), (122, 19177), (123, 19186), (126, 19240), (137, 19333), (139, 19342), (150, 19396),

Gene: Murp\_22 Start: 19288, Stop: 20199, Start Num: 45

Candidate Starts for Murp\_22:

(Start: 45 @19288 has 70 MA's), (49, 19327), (51, 19354), (65, 19513), (69, 19549), (71, 19555), (78, 19645), (80, 19672), (98, 19816), (110, 19909), (144, 20167),

Gene: NHagos\_42 Start: 35138, Stop: 36160, Start Num: 47

Candidate Starts for NHagos\_42:

(39, 35084), (Start: 47 @35138 has 14 MA's), (49, 35180), (51, 35207), (55, 35255), (62, 35309), (65, 35366), (71, 35411), (73, 35420), (74, 35453), (77, 35477), (80, 35516), (81, 35537), (82, 35558), (90, 35606), (93, 35630), (94, 35642), (96, 35654), (100, 35708), (102, 35729), (103, 35735), (104, 35753), (108, 35780), (109, 35789), (128, 35954), (129, 35957), (144, 36068), (147, 36077),

Gene: Nibbles\_23 Start: 19369, Stop: 20337, Start Num: 44

Candidate Starts for Nibbles\_23:

(Start: 41 @19360 has 6 MA's), (Start: 43 @19366 has 4 MA's), (Start: 44 @19369 has 41 MA's), (48, 19387), (50, 19411), (59, 19510), (71, 19639), (72, 19642), (73, 19648), (77, 19705), (80, 19744), (81, 19765), (91, 19843), (95, 19876), (96, 19885), (110, 20014), (113, 20023), (116, 20044), (122, 20092), (126, 20155), (129, 20170), (135, 20212),

Gene: Nina\_22 Start: 19439, Stop: 20407, Start Num: 41

Candidate Starts for Nina\_22:

(Start: 41 @19439 has 6 MA's), (42, 19442), (Start: 43 @19445 has 4 MA's), (Start: 44 @19448 has 41 MA's), (50, 19493), (54, 19559), (55, 19565), (65, 19676), (68, 19709), (71, 19721), (73, 19730), (77, 19787), (80, 19826), (91, 19925), (94, 19955), (99, 20015), (102, 20042), (109, 20093), (118, 20153),

(119, 20156), (122, 20171), (123, 20180), (126, 20234), (137, 20327), (139, 20336), (150, 20390),

Gene: Nodigi\_23 Start: 18410, Stop: 19381, Start Num: 44

Candidate Starts for Nodigi\_23:

(9, 17747), (12, 17822), (17, 17900), (20, 17981), (26, 18116), (Start: 44 @18410 has 41 MA's), (50, 18455), (59, 18554), (64, 18626), (69, 18677), (71, 18683), (81, 18824), (83, 18851), (111, 19073), (117, 19118), (126, 19199), (130, 19223), (131, 19226), (133, 19244), (143, 19319), (149, 19349),

Gene: Obliviate\_20 Start: 18810, Stop: 19721, Start Num: 45

Candidate Starts for Obliviate\_20:

(Start: 45 @18810 has 70 MA's), (51, 18876), (65, 19035), (69, 19071), (71, 19077), (80, 19194), (88, 19263), (98, 19338), (110, 19431), (125, 19539), (144, 19689),

Gene: Orla\_23 Start: 18414, Stop: 19385, Start Num: 44

Candidate Starts for Orla\_23:

(17, 17904), (20, 17985), (26, 18120), (Start: 44 @18414 has 41 MA's), (50, 18459), (59, 18558), (64, 18630), (67, 18660), (69, 18681), (71, 18687), (81, 18828), (83, 18855), (111, 19077), (117, 19122), (119, 19134), (126, 19203), (130, 19227), (131, 19230), (133, 19248), (143, 19323), (149, 19353),

Gene: PantheRoc\_21 Start: 19492, Stop: 20403, Start Num: 45

Candidate Starts for PantheRoc\_21:

(8, 18832), (10, 18841), (11, 18856), (13, 18928), (18, 18994), (21, 19072), (34, 19384), (Start: 45 @19492 has 70 MA's), (51, 19558), (56, 19615), (69, 19753), (71, 19759), (73, 19768), (79, 19861), (80, 19876), (85, 19933), (88, 19945), (98, 20020), (110, 20113), (144, 20371),

Gene: Periwinkle\_25 Start: 19684, Stop: 20661, Start Num: 45

Candidate Starts for Periwinkle\_25:

(32, 19528), (33, 19549), (35, 19600), (Start: 45 @19684 has 70 MA's), (48, 19705), (51, 19750), (58, 19819), (62, 19852), (65, 19909), (69, 19945), (71, 19951), (78, 20041), (80, 20068), (86, 20131), (88, 20137), (98, 20212), (110, 20308), (131, 20488), (136, 20533), (137, 20569), (138, 20575),

Gene: PhrostedPhlake\_23 Start: 19713, Stop: 20624, Start Num: 45

Candidate Starts for PhrostedPhlake\_23:

(34, 19599), (38, 19656), (40, 19698), (Start: 45 @19713 has 70 MA's), (51, 19779), (65, 19938), (69, 19974), (71, 19980), (80, 20097), (88, 20166), (98, 20241), (110, 20334), (144, 20592),

Gene: Pipp\_21 Start: 19014, Stop: 19925, Start Num: 45

Candidate Starts for Pipp\_21:

(Start: 45 @19014 has 70 MA's), (51, 19080), (65, 19239), (69, 19275), (71, 19281), (80, 19398), (88, 19467), (98, 19542), (110, 19635), (144, 19893),

Gene: Pons\_21 Start: 18086, Stop: 19057, Start Num: 44

Candidate Starts for Pons\_21:

(Start: 41 @18077 has 6 MA's), (Start: 43 @18083 has 4 MA's), (Start: 44 @18086 has 41 MA's), (52, 18185), (60, 18230), (63, 18251), (70, 18347), (71, 18350), (86, 18533), (91, 18566), (101, 18668), (104, 18707), (106, 18716), (110, 18740), (116, 18770), (117, 18791), (122, 18818), (126, 18881), (127, 18884), (139, 18983), (146, 19007), (147, 19010),

Gene: Posh\_24 Start: 20553, Stop: 21464, Start Num: 45

Candidate Starts for Posh\_24:

(Start: 45 @20553 has 70 MA's), (51, 20619), (65, 20778), (66, 20781), (69, 20814), (71, 20820), (80, 20937), (98, 21081), (110, 21174), (144, 21432),

Gene: PotPie\_21 Start: 18951, Stop: 19919, Start Num: 44

Candidate Starts for PotPie\_21:

(Start: 41 @18942 has 6 MA's), (Start: 43 @18948 has 4 MA's), (Start: 44 @18951 has 41 MA's), (52, 19050), (63, 19116), (70, 19212), (71, 19215), (78, 19305), (86, 19398), (91, 19431), (101, 19533), (104, 19572), (106, 19581), (110, 19599), (116, 19629), (117, 19650), (126, 19740), (127, 19743), (139, 19842), (146, 19866), (147, 19869),

Gene: PsychoKiller\_21 Start: 18397, Stop: 19365, Start Num: 41

Candidate Starts for PsychoKiller\_21:

(Start: 41 @18397 has 6 MA's), (42, 18400), (Start: 43 @18403 has 4 MA's), (Start: 44 @18406 has 41 MA's), (50, 18451), (54, 18517), (55, 18523), (65, 18634), (68, 18667), (71, 18679), (73, 18688), (77, 18745), (80, 18784), (91, 18883), (94, 18913), (99, 18973), (102, 19000), (109, 19051), (118, 19111), (119, 19114), (122, 19129), (123, 19138), (126, 19192), (137, 19285), (139, 19294), (150, 19348),

Gene: Pytheas\_24 Start: 20699, Stop: 21610, Start Num: 45

Candidate Starts for Pytheas\_24:

(Start: 45 @20699 has 70 MA's), (51, 20765), (65, 20924), (66, 20927), (69, 20960), (71, 20966), (80, 21083), (88, 21152), (98, 21227), (110, 21320), (144, 21578),

Gene: Quasar\_21 Start: 19015, Stop: 19974, Start Num: 44

Candidate Starts for Quasar\_21:

(Start: 41 @19006 has 6 MA's), (42, 19009), (Start: 43 @19012 has 4 MA's), (Start: 44 @19015 has 41 MA's), (50, 19060), (54, 19126), (55, 19132), (65, 19243), (68, 19276), (71, 19288), (73, 19297), (77, 19354), (80, 19393), (91, 19492), (94, 19522), (99, 19582), (102, 19609), (109, 19660), (118, 19720), (119, 19723), (122, 19738), (123, 19747), (126, 19801), (137, 19894), (139, 19903), (150, 19957),

Gene: RADical\_22 Start: 18398, Stop: 19366, Start Num: 41

Candidate Starts for RADical\_22:

(Start: 41 @18398 has 6 MA's), (42, 18401), (Start: 43 @18404 has 4 MA's), (Start: 44 @18407 has 41 MA's), (50, 18452), (54, 18518), (55, 18524), (65, 18635), (68, 18668), (71, 18680), (73, 18689), (77, 18746), (80, 18785), (91, 18884), (94, 18914), (99, 18974), (109, 19052), (118, 19112), (119, 19115), (122, 19130), (123, 19139), (126, 19193), (137, 19286), (139, 19295), (150, 19349),

Gene: RSchmailzl\_22 Start: 18541, Stop: 19509, Start Num: 41

Candidate Starts for RSchmailzl\_22:

(Start: 41 @18541 has 6 MA's), (42, 18544), (Start: 43 @18547 has 4 MA's), (Start: 44 @18550 has 41 MA's), (50, 18595), (54, 18661), (55, 18667), (65, 18778), (68, 18811), (71, 18823), (73, 18832), (77, 18889), (80, 18928), (91, 19027), (94, 19057), (99, 19117), (102, 19144), (109, 19195), (118, 19255), (119, 19258), (122, 19273), (123, 19282), (126, 19336), (137, 19429), (139, 19438), (150, 19492),

Gene: RanchParmCat\_24 Start: 18118, Stop: 19089, Start Num: 44

Candidate Starts for RanchParmCat\_24:

(28, 17872), (Start: 44 @18118 has 41 MA's), (50, 18163), (54, 18229), (59, 18262), (64, 18334), (69, 18385), (71, 18391), (78, 18481), (80, 18511), (111, 18781), (117, 18826), (119, 18838), (126, 18907), (131, 18934), (149, 19057),

Gene: RedBaron\_22 Start: 18444, Stop: 19409, Start Num: 42

Candidate Starts for RedBaron\_22:

(Start: 41 @18441 has 6 MA's), (42, 18444), (Start: 43 @18447 has 4 MA's), (Start: 44 @18450 has 41 MA's), (50, 18495), (54, 18561), (55, 18567), (65, 18678), (68, 18711), (71, 18723), (73, 18732), (77, 18789), (78, 18798), (80, 18828), (91, 18927), (94, 18957), (99, 19017), (102, 19044), (109, 19095), (118, 19155), (119, 19158), (122, 19173), (123, 19182), (126, 19236), (137, 19329), (139, 19338), (150, 19392),

Gene: Reyja\_22 Start: 17773, Stop: 18783, Start Num: 47

Candidate Starts for Reyja\_22:

(24, 17392), (25, 17398), (26, 17476), (Start: 47 @17773 has 14 MA's), (51, 17839), (59, 17914), (71, 18043), (85, 18208), (93, 18262), (94, 18274), (96, 18286), (107, 18409), (120, 18508), (124, 18535), (126, 18592), (130, 18616), (131, 18619), (143, 18718), (145, 18727),

Gene: Ruthy\_25 Start: 22394, Stop: 23305, Start Num: 45

Candidate Starts for Ruthy\_25:

(Start: 45 @22394 has 70 MA's), (51, 22460), (69, 22655), (71, 22661), (78, 22751), (80, 22778), (88, 22847), (98, 22922), (110, 23015), (144, 23273),

Gene: Samba\_21 Start: 19098, Stop: 20009, Start Num: 45

Candidate Starts for Samba\_21:

(Start: 45 @19098 has 70 MA's), (51, 19164), (65, 19323), (69, 19359), (71, 19365), (80, 19482), (88, 19551), (98, 19626), (110, 19719), (144, 19977),

Gene: Santhid\_21 Start: 17607, Stop: 18617, Start Num: 47

Candidate Starts for Santhid\_21:

(Start: 47 @17607 has 14 MA's), (51, 17673), (59, 17748), (71, 17877), (85, 18042), (93, 18096), (94, 18108), (96, 18120), (103, 18201), (107, 18243), (120, 18342), (124, 18369), (126, 18426), (131, 18453), (140, 18543), (142, 18549), (143, 18552), (145, 18561),

Gene: ShawBrad\_23 Start: 19227, Stop: 20204, Start Num: 45

Candidate Starts for ShawBrad\_23:

(32, 19071), (33, 19092), (35, 19143), (Start: 45 @19227 has 70 MA's), (48, 19248), (51, 19293), (58, 19362), (62, 19395), (65, 19452), (69, 19488), (71, 19494), (78, 19584), (80, 19611), (86, 19674), (88, 19680), (98, 19755), (110, 19851), (131, 20031), (136, 20076), (137, 20112), (138, 20118),

Gene: SheckWes\_20 Start: 18086, Stop: 19054, Start Num: 44

Candidate Starts for SheckWes\_20:

(Start: 41 @18077 has 6 MA's), (Start: 43 @18083 has 4 MA's), (Start: 44 @18086 has 41 MA's), (52, 18185), (63, 18251), (70, 18347), (71, 18350), (86, 18533), (91, 18566), (101, 18668), (104, 18707), (106, 18716), (110, 18737), (117, 18788), (122, 18815), (126, 18878), (127, 18881), (139, 18980), (147, 19007),

Gene: Sidious\_21 Start: 19616, Stop: 20527, Start Num: 45

Candidate Starts for Sidious\_21:

(34, 19505), (37, 19544), (Start: 45 @19616 has 70 MA's), (51, 19682), (65, 19841), (69, 19877), (71, 19883), (78, 19973), (80, 20000), (88, 20069), (98, 20144), (110, 20237), (144, 20495),

Gene: SketchMex\_20 Start: 18077, Stop: 19039, Start Num: 44

Candidate Starts for SketchMex\_20:

(Start: 44 @18077 has 41 MA's), (55, 18194), (59, 18221), (65, 18305), (71, 18350), (73, 18359), (76, 18404), (80, 18455), (91, 18554), (94, 18584), (110, 18725), (118, 18785), (119, 18788), (122, 18803), (126, 18866), (137, 18959), (139, 18968),

Gene: Socotra\_22 Start: 18397, Stop: 19365, Start Num: 41

Candidate Starts for Socotra\_22:

(Start: 41 @18397 has 6 MA's), (42, 18400), (Start: 43 @18403 has 4 MA's), (Start: 44 @18406 has 41 MA's), (50, 18451), (54, 18517), (55, 18523), (65, 18634), (68, 18667), (71, 18679), (73, 18688), (77, 18745), (80, 18784), (91, 18883), (94, 18913), (99, 18973), (102, 19000), (109, 19051), (118, 19111), (119, 19114), (122, 19129), (123, 19138), (126, 19192), (137, 19285), (139, 19294), (150, 19348),

Gene: Sopespian\_21 Start: 18398, Stop: 19366, Start Num: 41

Candidate Starts for Sopespian\_21:

(Start: 41 @18398 has 6 MA's), (42, 18401), (Start: 43 @18404 has 4 MA's), (Start: 44 @18407 has 41 MA's), (50, 18452), (54, 18518), (55, 18524), (65, 18635), (68, 18668), (71, 18680), (73, 18689), (77, 18746), (80, 18785), (91, 18884), (94, 18914), (99, 18974), (102, 19001), (109, 19052), (118, 19112), (119, 19115), (122, 19130), (123, 19139), (126, 19193), (137, 19286), (139, 19295), (150, 19349),

Gene: Spooky\_23 Start: 19375, Stop: 20289, Start Num: 45

Candidate Starts for Spooky\_23:

(Start: 45 @19375 has 70 MA's), (51, 19441), (58, 19510), (65, 19600), (69, 19636), (71, 19642), (78, 19732), (80, 19759), (88, 19828), (98, 19903), (110, 19996), (121, 20065), (144, 20257),

Gene: Sprinklemunch\_25 Start: 23888, Stop: 24880, Start Num: 45

Candidate Starts for Sprinklemunch\_25:

(23, 23486), (33, 23747), (Start: 45 @23888 has 70 MA's), (51, 23954), (52, 23984), (62, 24056), (69, 24149), (71, 24155), (80, 24272), (85, 24329), (88, 24341), (110, 24527), (138, 24794),

Gene: Squiddly\_25 Start: 20787, Stop: 21701, Start Num: 45

Candidate Starts for Squiddly\_25:

(Start: 45 @20787 has 70 MA's), (51, 20853), (58, 20922), (65, 21012), (69, 21048), (71, 21054), (78, 21144), (80, 21171), (88, 21240), (98, 21315), (110, 21408), (121, 21477), (144, 21669),

Gene: Starburst\_22 Start: 18397, Stop: 19365, Start Num: 41

Candidate Starts for Starburst\_22:

(Start: 41 @18397 has 6 MA's), (42, 18400), (Start: 43 @18403 has 4 MA's), (Start: 44 @18406 has 41 MA's), (50, 18451), (54, 18517), (55, 18523), (65, 18634), (68, 18667), (71, 18679), (73, 18688), (77, 18745), (80, 18784), (91, 18883), (94, 18913), (99, 18973), (102, 19000), (109, 19051), (118, 19111), (119, 19114), (122, 19129), (123, 19138), (126, 19192), (137, 19285), (139, 19294), (150, 19348),

Gene: SteamedHams\_23 Start: 18099, Stop: 19049, Start Num: 46

Candidate Starts for SteamedHams\_23:

(Start: 46 @18099 has 8 MA's), (59, 18243), (61, 18261), (65, 18327), (68, 18360), (71, 18372), (73, 18381), (76, 18426), (80, 18477), (81, 18498), (82, 18519), (91, 18576), (94, 18606), (102, 18693), (105, 18720), (109, 18744), (119, 18807), (126, 18885), (129, 18900), (130, 18909), (136, 18954), (137, 18984),

Gene: SummitAcademy\_20 Start: 18166, Stop: 19131, Start Num: 44

Candidate Starts for SummitAcademy\_20:

(Start: 41 @18157 has 6 MA's), (Start: 43 @18163 has 4 MA's), (Start: 44 @18166 has 41 MA's), (52, 18265), (63, 18331), (70, 18427), (71, 18430), (86, 18613), (91, 18646), (101, 18748), (104, 18787), (106, 18796), (110, 18814), (116, 18844), (117, 18865), (126, 18955), (127, 18958), (134, 19006), (139, 19057), (146, 19081), (147, 19084),

Gene: Survivors\_23 Start: 19218, Stop: 20186, Start Num: 44

Candidate Starts for Survivors\_23:

(Start: 41 @19209 has 6 MA's), (Start: 43 @19215 has 4 MA's), (Start: 44 @19218 has 41 MA's), (48, 19236), (50, 19260), (59, 19359), (71, 19488), (72, 19491), (73, 19497), (77, 19554), (80, 19593), (81, 19614), (91, 19692), (95, 19725), (96, 19734), (110, 19863), (113, 19872), (116, 19893), (122, 19941), (126, 20004), (129, 20019), (135, 20061),

Gene: SweatNTears\_23 Start: 18588, Stop: 19550, Start Num: 44

Candidate Starts for SweatNTears\_23:

(Start: 44 @18588 has 41 MA's), (55, 18705), (59, 18732), (65, 18816), (71, 18861), (73, 18870), (76, 18915), (80, 18966), (91, 19065), (94, 19095), (105, 19209), (110, 19236), (118, 19296), (119, 19299), (122, 19314), (126, 19377), (137, 19470), (139, 19479),

Gene: Tarzan\_21 Start: 17576, Stop: 18586, Start Num: 47

Candidate Starts for Tarzan\_21:

(25, 17201), (26, 17279), (Start: 47 @17576 has 14 MA's), (51, 17642), (59, 17717), (71, 17846), (85, 18011), (93, 18065), (94, 18077), (96, 18089), (107, 18212), (124, 18338), (126, 18395), (130, 18419), (131, 18422), (142, 18518), (143, 18521), (145, 18530),

Gene: ThankyouJordi\_20 Start: 20133, Stop: 21047, Start Num: 45

Candidate Starts for ThankyouJordi\_20:

(34, 20022), (Start: 45 @20133 has 70 MA's), (49, 20172), (51, 20199), (69, 20397), (71, 20403), (80, 20520), (98, 20664), (102, 20709), (110, 20757), (144, 21015),

Gene: Tolls\_23 Start: 18102, Stop: 19052, Start Num: 46

Candidate Starts for Tolls\_23:

(Start: 46 @18102 has 8 MA's), (59, 18246), (61, 18264), (65, 18330), (68, 18363), (71, 18375), (73, 18384), (76, 18429), (80, 18480), (81, 18501), (82, 18522), (91, 18579), (94, 18609), (102, 18696), (105, 18723), (109, 18747), (119, 18810), (126, 18888), (129, 18903), (130, 18912), (136, 18957), (137, 18987), (139, 18996),

Gene: TraderJ\_44 Start: 36566, Stop: 37585, Start Num: 47

Candidate Starts for TraderJ\_44:

(1, 35822), (3, 35828), (4, 35849), (5, 35876), (6, 35882), (7, 35885), (14, 36032), (16, 36056), (20, 36140), (24, 36191), (26, 36275), (39, 36512), (Start: 47 @36566 has 14 MA's), (49, 36605), (55, 36680), (62, 36734), (65, 36791), (71, 36836), (74, 36878), (77, 36902), (80, 36941), (81, 36962), (82, 36983), (87, 37010), (93, 37055), (94, 37067), (96, 37079), (100, 37133), (102, 37154), (103, 37160), (104, 37178), (108, 37205), (109, 37214), (128, 37379), (129, 37382), (131, 37394), (144, 37493), (147, 37502), (152, 37538),

Gene: Troje\_21 Start: 18059, Stop: 19021, Start Num: 44

Candidate Starts for Troje\_21:

(Start: 44 @18059 has 41 MA's), (55, 18176), (59, 18203), (65, 18287), (71, 18332), (73, 18341), (76, 18386), (80, 18437), (91, 18536), (94, 18566), (110, 18707), (118, 18767), (119, 18770), (122, 18785), (126, 18848), (137, 18941), (139, 18950),

Gene: Typhonomachy\_21 Start: 18406, Stop: 19365, Start Num: 44

Candidate Starts for Typhonomachy\_21:

(Start: 41 @18397 has 6 MA's), (42, 18400), (Start: 43 @18403 has 4 MA's), (Start: 44 @18406 has 41 MA's), (50, 18451), (54, 18517), (55, 18523), (65, 18634), (68, 18667), (71, 18679), (73, 18688), (77, 18745), (80, 18784), (91, 18883), (94, 18913), (99, 18973), (102, 19000), (109, 19051), (118, 19111), (119, 19114), (122, 19129), (123, 19138), (126, 19192), (137, 19285), (139, 19294), (150, 19348),

Gene: UmaThurman\_21 Start: 19145, Stop: 20056, Start Num: 45

Candidate Starts for UmaThurman\_21:

(Start: 45 @19145 has 70 MA's), (51, 19211), (65, 19370), (69, 19406), (71, 19412), (80, 19529), (88, 19598), (98, 19673), (110, 19766), (144, 20024),

Gene: Utz\_21 Start: 19015, Stop: 19926, Start Num: 45

Candidate Starts for Utz\_21:

(Start: 45 @19015 has 70 MA's), (51, 19081), (65, 19240), (69, 19276), (71, 19282), (80, 19399), (88, 19468), (98, 19543), (110, 19636), (114, 19648), (144, 19894),

Gene: Vine\_22 Start: 19098, Stop: 20066, Start Num: 44

Candidate Starts for Vine\_22:

(Start: 41 @19089 has 6 MA's), (Start: 43 @19095 has 4 MA's), (Start: 44 @19098 has 41 MA's), (52, 19197), (63, 19263), (70, 19359), (71, 19362), (86, 19545), (91, 19578), (101, 19680), (104, 19719), (106, 19728), (110, 19746), (116, 19776), (117, 19797), (126, 19887), (127, 19890), (134, 19938), (139, 19989), (146, 20013), (147, 20016),

Gene: Walrus\_23 Start: 19560, Stop: 20471, Start Num: 45

Candidate Starts for Walrus\_23:

(30, 19353), (31, 19362), (34, 19446), (38, 19503), (40, 19545), (Start: 45 @19560 has 70 MA's), (51, 19626), (65, 19785), (69, 19821), (71, 19827), (80, 19944), (88, 20013), (98, 20088), (110, 20181), (144, 20439),

Gene: WelcomeAyanna\_20 Start: 20133, Stop: 21047, Start Num: 45

Candidate Starts for WelcomeAyanna\_20:

(34, 20022), (Start: 45 @20133 has 70 MA's), (49, 20172), (51, 20199), (69, 20397), (71, 20403), (80, 20520), (98, 20664), (102, 20709), (110, 20757), (144, 21015),

Gene: Whitney\_24 Start: 20189, Stop: 21103, Start Num: 45

Candidate Starts for Whitney\_24:

(Start: 45 @20189 has 70 MA's), (51, 20255), (65, 20414), (69, 20450), (71, 20456), (78, 20546), (80, 20573), (88, 20642), (98, 20717), (110, 20810), (121, 20879), (144, 21071),

Gene: William\_21 Start: 19064, Stop: 19978, Start Num: 45

Candidate Starts for William\_21:

(Start: 45 @19064 has 70 MA's), (51, 19130), (62, 19232), (69, 19325), (71, 19331), (88, 19514), (98, 19589), (110, 19682),

Gene: Wisp\_20 Start: 18730, Stop: 19641, Start Num: 45

Candidate Starts for Wisp\_20:

(Start: 45 @18730 has 70 MA's), (51, 18796), (65, 18955), (69, 18991), (71, 18997), (80, 19114), (88, 19183), (98, 19258), (110, 19351), (144, 19609),

Gene: Wolfwood\_25 Start: 19353, Stop: 20330, Start Num: 41

Candidate Starts for Wolfwood\_25:

(Start: 41 @19353 has 6 MA's), (Start: 43 @19359 has 4 MA's), (Start: 44 @19362 has 41 MA's), (48, 19380), (50, 19404), (59, 19503), (71, 19632), (72, 19635), (73, 19641), (77, 19698), (80, 19737), (81, 19758), (91, 19836), (95, 19869), (96, 19878), (97, 19902), (110, 20007), (113, 20016), (116, 20037), (122, 20085), (126, 20148), (129, 20163), (135, 20205),

Gene: Wooper\_44 Start: 36572, Stop: 37591, Start Num: 47

Candidate Starts for Wooper\_44:

(1, 35828), (3, 35834), (4, 35855), (5, 35882), (6, 35888), (7, 35891), (14, 36038), (16, 36062), (20, 36146), (24, 36197), (26, 36281), (39, 36518), (Start: 47 @36572 has 14 MA's), (49, 36611), (55, 36686), (62, 36740), (65, 36797), (71, 36842), (74, 36884), (77, 36908), (80, 36947), (81, 36968), (82, 36989), (87, 37016), (93, 37061), (94, 37073), (96, 37085), (100, 37139), (102, 37160), (103, 37166), (104, 37184), (108, 37211), (109, 37220), (128, 37385), (129, 37388), (131, 37400), (144, 37499), (147, 37508), (152, 37544),

Gene: Wrigley\_24 Start: 20450, Stop: 21361, Start Num: 45

Candidate Starts for Wrigley\_24:

(Start: 45 @20450 has 70 MA's), (51, 20516), (65, 20675), (66, 20678), (69, 20711), (71, 20717), (80, 20834), (98, 20978), (110, 21071), (144, 21329),

Gene: Yakult\_22 Start: 17972, Stop: 18943, Start Num: 44

Candidate Starts for Yakult\_22:

(Start: 44 @17972 has 41 MA's), (50, 18017), (54, 18083), (59, 18116), (62, 18143), (67, 18218), (71, 18245), (91, 18464), (94, 18494), (112, 18635), (126, 18761), (130, 18785), (149, 18911),

Gene: Yarn\_20 Start: 18092, Stop: 19042, Start Num: 46

Candidate Starts for Yarn\_20:

(Start: 46 @18092 has 8 MA's), (59, 18236), (61, 18254), (65, 18320), (68, 18353), (71, 18365), (73, 18374), (76, 18419), (80, 18470), (81, 18491), (82, 18512), (91, 18569), (94, 18599), (102, 18686), (105, 18713), (109, 18737), (119, 18800), (126, 18878), (129, 18893), (130, 18902), (136, 18947), (137, 18977), (139, 18986),

Gene: Yeezy\_22 Start: 19516, Stop: 20427, Start Num: 45

Candidate Starts for Yeezy\_22:

(8, 18856), (10, 18865), (11, 18880), (13, 18952), (18, 19018), (21, 19096), (34, 19408), (Start: 45 @19516 has 70 MA's), (51, 19582), (56, 19639), (69, 19777), (71, 19783), (73, 19792), (79, 19885), (80, 19900), (85, 19957), (88, 19969), (98, 20044), (110, 20137), (144, 20395),

Gene: Yeshua\_44 Start: 36549, Stop: 37568, Start Num: 47

Candidate Starts for Yeshua\_44:

(1, 35805), (3, 35811), (4, 35832), (5, 35859), (6, 35865), (7, 35868), (14, 36015), (16, 36039), (20, 36123), (24, 36174), (26, 36258), (39, 36495), (Start: 47 @36549 has 14 MA's), (49, 36588), (55, 36663), (62, 36717), (65, 36774), (71, 36819), (74, 36861), (77, 36885), (80, 36924), (81, 36945), (82, 36966), (87, 36993), (93, 37038), (94, 37050), (96, 37062), (100, 37116), (102, 37137), (103, 37143), (104, 37161), (108, 37188), (109, 37197), (128, 37362), (129, 37365), (131, 37377), (144, 37476), (147, 37485), (152, 37521),

Gene: Yucky\_21 Start: 18957, Stop: 19925, Start Num: 44

Candidate Starts for Yucky\_21:

(Start: 41 @18948 has 6 MA's), (Start: 43 @18954 has 4 MA's), (Start: 44 @18957 has 41 MA's), (52, 19056), (63, 19122), (70, 19218), (71, 19221), (86, 19404), (91, 19437), (101, 19539), (104, 19578), (106, 19587), (110, 19605), (116, 19635), (117, 19656), (126, 19746), (127, 19749), (134, 19797), (139, 19848), (146, 19872), (147, 19875),

Gene: Yummy\_22 Start: 17973, Stop: 18935, Start Num: 44

Candidate Starts for Yummy\_22:

(Start: 44 @17973 has 41 MA's), (55, 18090), (59, 18117), (65, 18201), (71, 18246), (73, 18255), (76, 18300), (80, 18351), (91, 18450), (94, 18480), (110, 18621), (118, 18681), (119, 18684), (122, 18699), (126, 18762), (137, 18855), (139, 18864),

Gene: Zarbodnamra\_21 Start: 19019, Stop: 19930, Start Num: 45

Candidate Starts for Zarbodnamra\_21:

(Start: 45 @19019 has 70 MA's), (51, 19085), (65, 19244), (69, 19280), (71, 19286), (80, 19403), (88, 19472), (98, 19547), (110, 19640), (114, 19652), (144, 19898),

Gene: Zareef\_23 Start: 19361, Stop: 20338, Start Num: 41

Candidate Starts for Zareef\_23:

(Start: 41 @19361 has 6 MA's), (Start: 43 @19367 has 4 MA's), (Start: 44 @19370 has 41 MA's), (48, 19388), (50, 19412), (59, 19511), (71, 19640), (72, 19643), (73, 19649), (77, 19706), (80, 19745), (81, 19766), (91, 19844), (95, 19877), (96, 19886), (110, 20015), (113, 20024), (116, 20045), (122, 20093),

(126, 20156), (129, 20171), (135, 20213),

Gene: ZiggyZoo\_20 Start: 18810, Stop: 19721, Start Num: 45

Candidate Starts for ZiggyZoo\_20:

(Start: 45 @18810 has 70 MA's), (51, 18876), (65, 19035), (69, 19071), (71, 19077), (80, 19194), (88, 19263), (98, 19338), (110, 19431), (125, 19539), (144, 19689),

Gene: Zilla\_21 Start: 19037, Stop: 19948, Start Num: 45

Candidate Starts for Zilla\_21:

(Start: 45 @19037 has 70 MA's), (51, 19103), (65, 19262), (69, 19298), (71, 19304), (80, 19421), (88, 19490), (98, 19565), (110, 19658), (114, 19670), (144, 19916),

Gene: Zodiariah\_25 Start: 23934, Stop: 24923, Start Num: 45

Candidate Starts for Zodiariah\_25:

(23, 23532), (33, 23793), (Start: 45 @23934 has 70 MA's), (51, 24000), (52, 24030), (62, 24102), (69, 24195), (71, 24201), (80, 24318), (85, 24375), (88, 24387), (110, 24570), (128, 24735), (138, 24837), (151, 24897),