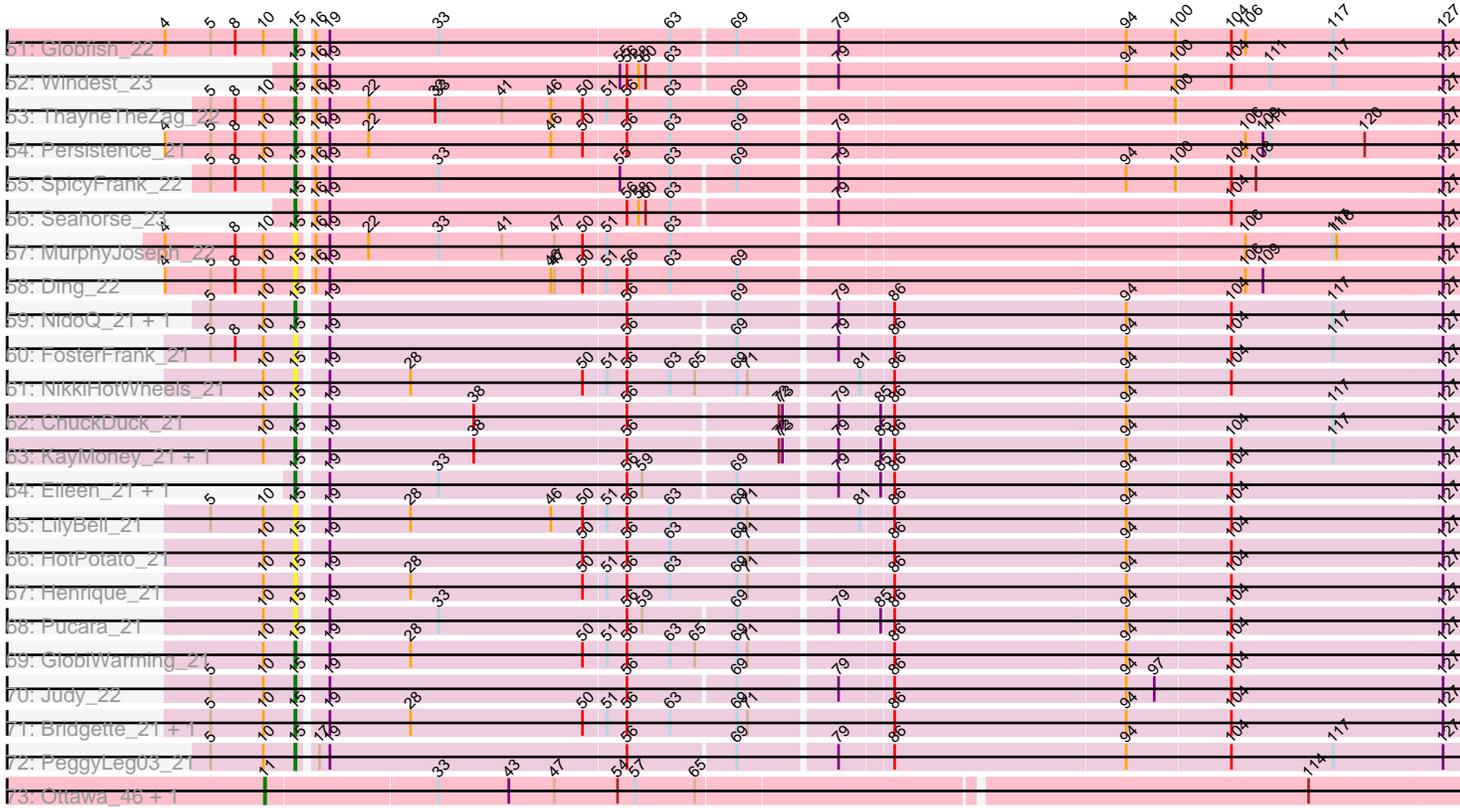


Pham 283576



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 283576 Report

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

Pham number 283576 has 142 members, 51 are drafts.

Phages represented in each track:

- Track 1 : Edmundo\_70
- Track 2 : Laroye\_70, LiSara\_67
- Track 3 : ApoKipo\_72
- Track 4 : Salgado\_70
- Track 5 : Waltz\_67
- Track 6 : Wheelbite\_66
- Track 7 : Kovu\_68
- Track 8 : Shrooms\_68
- Track 9 : Zixiang\_19, Niblet\_19, Chicken\_19
- Track 10 : Amanises\_20, KendraB23\_20, Toad24\_20, Shen\_20
- Track 11 : Vulpecula\_19
- Track 12 : Eesa\_19, Pelletreau\_20, Gravel\_20
- Track 13 : Jamun\_19, Brynnie\_19, WileyE\_18, Chickaboom\_18
- Track 14 : Ruchi\_19
- Track 15 : Westrich\_20
- Track 16 : Basilisk\_19
- Track 17 : TaylorSipht\_19
- Track 18 : Orcanus\_19
- Track 19 : Cygnet\_19, Antrice\_19
- Track 20 : LittleTokyo\_19
- Track 21 : Pineda\_20, Bibble12\_20, Amelia\_20, PhirstandPhine\_20, Bedetta\_20, Lunar\_20
- Track 22 : Kuleana\_19
- Track 23 : Polka\_19
- Track 24 : Jerole\_20, HannahPhantana\_20, Cote\_20, Coral\_19, Daob\_20, Colusalem\_19, Kepler\_19, Melons\_20
- Track 25 : Zhuangyuan\_21
- Track 26 : OtsoOtso\_19
- Track 27 : Amphitrite\_18, HamCheese\_18, DanHam62\_18, Glotell\_18, Oppalora\_18, PhluffyCoco\_18, Laphuphu24k\_18, AmiCi24\_18, AdoptaAdorbs\_18, RedFox\_18
- Track 28 : Fingolfin\_18, Juno112\_18, KHumphrey\_18, Atlantica\_18, Camara\_18
- Track 29 : Leona\_18, Azaz\_18, Rattail\_18
- Track 30 : StuartMinion\_18, AlexMinion\_19
- Track 31 : Renna12\_19
- Track 32 : Babushka\_18
- Track 33 : Andrew\_19

- Track 34 : Aikyam\_22
- Track 35 : CookieBear\_22, YoungHarleezy\_22, MidnightRain\_22
- Track 36 : LeBruni\_23
- Track 37 : JellyBread\_22, Vopal\_23, BillyTP\_22, Auxilium\_22, Sakai\_22, Mapleville\_22, Lawnathon\_22, Raphaella\_22, Gorpy\_22
- Track 38 : Sporco\_23, MaterMagnus\_22
- Track 39 : GumGum\_22
- Track 40 : RadFad\_22, Hillester\_22
- Track 41 : DarwinJr\_25, Anekin\_21, Crescenzo\_22
- Track 42 : MUWow\_21
- Track 43 : Lasker\_22, Richie\_22, BlueShadow\_22, BasketStar\_22, BenchScraper\_22
- Track 44 : Tiff81\_23
- Track 45 : SonDevVon\_21
- Track 46 : Phrank15\_21, AdaS\_22, Isolde\_22
- Track 47 : Hestia\_22, NewKitty\_23, CosmicBrownie\_22, Nyilah\_21
- Track 48 : Bhageatrice\_24
- Track 49 : Kabloowy\_22
- Track 50 : Satrap\_22, Shukran\_22
- Track 51 : Globfish\_22
- Track 52 : Windest\_23
- Track 53 : ThayneTheZag\_22
- Track 54 : Persistence\_21
- Track 55 : SpicyFrank\_22
- Track 56 : Seahorse\_23
- Track 57 : MurphyJoseph\_22
- Track 58 : Ding\_22
- Track 59 : NidoQ\_21, Constance\_21
- Track 60 : FosterFrank\_21
- Track 61 : NikkiHotWheels\_21
- Track 62 : ChuckDuck\_21
- Track 63 : KayMoney\_21, LittleRon\_21
- Track 64 : Eileen\_21, Peas\_21
- Track 65 : LilyBell\_21
- Track 66 : HotPotato\_21
- Track 67 : Henrique\_21
- Track 68 : Pucara\_21
- Track 69 : GlobiWarming\_21
- Track 70 : Judy\_22
- Track 71 : Bridgette\_21, Karkharias\_21
- Track 72 : PeggyLeg03\_21
- Track 73 : Ottawa\_46, Kharcho\_46

***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 69 of the 91 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AdaS\_22, AdoptaAdorbs\_18, Aikyam\_22, AlexMinion\_19, Amanises\_20, Amelia\_20, AmiCi24\_18, Amphitrite\_18, Andrew\_19, Anekin\_21, Antrice\_19, Atlantica\_18, Auxilium\_22, Azaz\_18, Babushka\_18, Basilisk\_19, BasketStar\_22, Bedetta\_20, BenchScraper\_22, Bhageatrice\_24, Bibble12\_20, BillyTP\_22, BlueShadow\_22, Bridgette\_21, Brynnie\_19, Camara\_18, Chickaboom\_18, Chicken\_19, ChuckDuck\_21, Constance\_21, CookieBear\_22, CosmicBrownie\_22, Crescenzo\_22, Cygnet\_19, DanHam62\_18, DarwinJr\_25, Ding\_22, Eesa\_19, Eileen\_21, Fingolfin\_18, FosterFrank\_21, Globfish\_22, GlobiWarming\_21, Glotell\_18, Gorpy\_22, Gravel\_20, GumGum\_22, HamCheese\_18, Henrique\_21, Hestia\_22, Hillester\_22, HotPotato\_21, Isolde\_22, Jamun\_19, JellyBread\_22, Judy\_22, Juno112\_18, KHumphrey\_18, Kabloowy\_22, Karkharias\_21, KayMoney\_21, KendraB23\_20, Kuleana\_19, Laphuphu24k\_18, Lasker\_22, Lawnathon\_22, LeBruni\_23, Leona\_18, LilyBell\_21, LittleRon\_21, Lunar\_20, MUWow\_21, Mapleville\_22, MaterMagnus\_22, MidnightRain\_22, MurphyJoseph\_22, NewKitty\_23, Niblet\_19, NidoQ\_21, NikkiHotWheels\_21, Nyilah\_21, Oppalora\_18, Orcanus\_19, OtsoOtso\_19, Peas\_21, PeggyLeg03\_21, Pelletreau\_20, Persistence\_21, PhirstandPhine\_20, PhluffyCoco\_18, Phrank15\_21, Pineda\_20, Pucara\_21, RadFad\_22, Raphaella\_22, Rattail\_18, RedFox\_18, Renna12\_19, Richie\_22, Ruchi\_19, Sakai\_22, Satrap\_22, Seahorse\_23, Shen\_20, Shukran\_22, SpicyFrank\_22, Sporco\_23, StuartMinion\_18, TaylorSipht\_19, ThayneTheZag\_22, Tiff81\_23, Toad24\_20, Vopal\_23, Westrich\_20, WileyE\_18, Windest\_23, YoungHarleezy\_22, Zhuangyuan\_21, Zixiang\_19,

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

- Colusalem\_19, Coral\_19, Cote\_20, Daob\_20, HannahPhantana\_20, Jerole\_20, Kepler\_19, LittleTokyo\_19, Melons\_20, Polka\_19, SonDevVon\_21, Vulpecula\_19,

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

- ApoKipo\_72, Edmundo\_70, Kharcho\_46, Kovu\_68, Laroye\_70, LiSara\_67, Ottawa\_46, Salgado\_70, Shrooms\_68, Waltz\_67, Wheelbite\_66,

### Summary by start number:

Start 10:

- Found in 35 of 142 ( 24.6% ) of genes in pham
- Manual Annotations of this start: 7 of 91
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Edmundo\_70 (AL), Laroye\_70 (AL), LiSara\_67 (AL), Salgado\_70 (AL), Shrooms\_68 (AL), Waltz\_67 (AL), Wheelbite\_66 (AL),

Start 11:

- Found in 4 of 142 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 4 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ApoKipo\_72 (AL), Kharcho\_46 (FM), Kovu\_68 (AL), Ottawa\_46 (FM),

Start 13:

- Found in 16 of 142 ( 11.3% ) of genes in pham
- Manual Annotations of this start: 9 of 91
- Called 56.2% of time when present

- Phage (with cluster) where this start called: Colusalem\_19 (AS2), Coral\_19 (AS2), Cote\_20 (AS2), Daob\_20 (AS2), HannahPhantana\_20 (AS2), Jerole\_20 (AS2), Kepler\_19 (AS2), Melons\_20 (AS2), Polka\_19 (AS2),

#### Start 14:

- Found in 8 of 142 ( 5.6% ) of genes in pham
- Manual Annotations of this start: 2 of 91
- Called 25.0% of time when present
- Phage (with cluster) where this start called: LittleTokyo\_19 (AS2), Vulpecula\_19 (AS1),

#### Start 15:

- Found in 131 of 142 ( 92.3% ) of genes in pham
- Manual Annotations of this start: 69 of 91
- Called 90.8% of time when present
- Phage (with cluster) where this start called: AdaS\_22 (AY), AdoptaAdorbs\_18 (AS3), Aikyam\_22 (AY), AlexMinion\_19 (AS3), Amanises\_20 (AS1), Amelia\_20 (AS2), AmiCi24\_18 (AS3), Amphitrite\_18 (AS3), Andrew\_19 (AS3), Anekin\_21 (AY), Antrice\_19 (AS2), Atlantica\_18 (AS3), Auxilium\_22 (AY), Azaz\_18 (AS3), Babushka\_18 (AS3), Basilisk\_19 (AS1), BasketStar\_22 (AY), Bedetta\_20 (AS2), BenchScraper\_22 (AY), Bhageatrice\_24 (AY), Bible12\_20 (AS2), BillyTP\_22 (AY), BlueShadow\_22 (AY), Bridgette\_21 (FA), Brynnie\_19 (AS1), Camara\_18 (AS3), Chickaboom\_18 (AS1), Chicken\_19 (AS1), ChuckDuck\_21 (FA), Constance\_21 (FA), CookieBear\_22 (AY), CosmicBrownie\_22 (AY), Crescenzo\_22 (AY), Cygnet\_19 (AS2), DanHam62\_18 (AS3), DarwinJr\_25 (AY), Ding\_22 (AY), Eesa\_19 (AS1), Eileen\_21 (FA), Fingolfin\_18 (AS3), FosterFrank\_21 (FA), Globfish\_22 (AY), GlobiWarming\_21 (FA), Glotell\_18 (AS3), Gorpy\_22 (AY), Gravel\_20 (AS1), GumGum\_22 (AY), HamCheese\_18 (AS3), Henrique\_21 (FA), Hestia\_22 (AY), Hillester\_22 (AY), HotPotato\_21 (FA), Isolde\_22 (AY), Jamun\_19 (AS1), JellyBread\_22 (AY), Judy\_22 (FA), Juno112\_18 (AS3), KHumphrey\_18 (AS3), Kabloowy\_22 (AY), Karkharias\_21 (FA), KayMoney\_21 (FA), KendraB23\_20 (AS1), Kuleana\_19 (AS2), Laphuphu24k\_18 (AS3), Lasker\_22 (AY), Lawnathon\_22 (AY), LeBruni\_23 (AY), Leona\_18 (AS3), LilyBell\_21 (FA), LittleRon\_21 (FA), Lunar\_20 (AS2), MUWow\_21 (AY), Mapleville\_22 (AY), MaterMagnus\_22 (AY), MidnightRain\_22 (AY), MurphyJoseph\_22 (AY), NewKitty\_23 (AY), Niblet\_19 (AS1), NidoQ\_21 (FA), NikkiHotWheels\_21 (FA), Nyilah\_21 (AY), Oppalora\_18 (AS3), Orcanus\_19 (AS1), OtsoOtso\_19 (AS2), Peas\_21 (FA), PeggyLeg03\_21 (FA), Pelletreau\_20 (AS1), Persistence\_21 (AY), PhirstandPhine\_20 (AS2), PhluffyCoco\_18 (AS3), Phrank15\_21 (AY), Pineda\_20 (AS2), Pucara\_21 (FA), RadFad\_22 (AY), Raphaella\_22 (AY), Rattail\_18 (AS3), RedFox\_18 (AS3), Renna12\_19 (AS3), Richie\_22 (AY), Ruchi\_19 (AS1), Sakai\_22 (AY), Satrap\_22 (AY), Seahorse\_23 (AY), Shen\_20 (AS1), Shukran\_22 (AY), SpicyFrank\_22 (AY), Sporco\_23 (AY), StuartMinion\_18 (AS3), TaylorSipht\_19 (AS1), ThayneTheZag\_22 (AY), Tiff81\_23 (AY), Toad24\_20 (AS1), Vopal\_23 (AY), Westrich\_20 (AS1), WileyE\_18 (AS1), Windest\_23 (AY), YoungHarleezy\_22 (AY), Zhuangyuan\_21 (AS2), Zixiang\_19 (AS1),

#### Start 19:

- Found in 46 of 142 ( 32.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.2% of time when present
- Phage (with cluster) where this start called: SonDevVon\_21 (AY),

## Summary by clusters:

There are 7 clusters represented in this pham: AS3, AS2, AS1, AL, FA, AY, FM,

Info for manual annotations of cluster AL:

- Start number 10 was manually annotated 7 times for cluster AL.
- Start number 11 was manually annotated 2 times for cluster AL.

Info for manual annotations of cluster AS1:

- Start number 14 was manually annotated 1 time for cluster AS1.
- Start number 15 was manually annotated 9 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 13 was manually annotated 9 times for cluster AS2.
- Start number 14 was manually annotated 1 time for cluster AS2.
- Start number 15 was manually annotated 6 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 15 was manually annotated 14 times for cluster AS3.

Info for manual annotations of cluster AY:

- Start number 15 was manually annotated 30 times for cluster AY.

Info for manual annotations of cluster FA:

- Start number 15 was manually annotated 10 times for cluster FA.

Info for manual annotations of cluster FM:

- Start number 11 was manually annotated 2 times for cluster FM.

## Gene Information:

Gene: AdaS\_22 Start: 16933, Stop: 17892, Start Num: 15

Candidate Starts for AdaS\_22:

(Start: 15 @16933 has 69 MA's), (16, 16942), (19, 16954), (55, 17197), (56, 17203), (58, 17212), (60, 17218), (63, 17239), (79, 17368), (94, 17608), (100, 17650), (104, 17695), (117, 17782), (127, 17875),

Gene: AdoptaAdorbs\_18 Start: 14180, Stop: 15139, Start Num: 15

Candidate Starts for AdoptaAdorbs\_18:

(Start: 15 @14180 has 69 MA's), (24, 14252), (29, 14279), (31, 14294), (40, 14348), (46, 14396), (54, 14450), (61, 14477), (69, 14543), (70, 14549), (74, 14588), (78, 14609), (85, 14651), (104, 14942), (105, 14951), (106, 14954), (109, 14969), (118, 15032), (122, 15080),

Gene: Aikyam\_22 Start: 16934, Stop: 17893, Start Num: 15

Candidate Starts for Aikyam\_22:

(Start: 15 @16934 has 69 MA's), (16, 16943), (55, 17198), (56, 17204), (58, 17213), (59, 17216), (60, 17219), (63, 17240), (79, 17369), (94, 17609), (104, 17696), (117, 17783), (127, 17876),

Gene: AlexMinion\_19 Start: 14221, Stop: 15183, Start Num: 15

Candidate Starts for AlexMinion\_19:

(9, 14173), (Start: 15 @14221 has 69 MA's), (24, 14290), (28, 14314), (30, 14323), (31, 14332), (38, 14368), (40, 14386), (45, 14428), (46, 14434), (54, 14488), (61, 14515), (68, 14569), (69, 14581), (70,

14587), (84, 14692), (85, 14695), (91, 14818), (104, 14986), (106, 14998), (109, 15013), (120, 15100), (122, 15124),

Gene: Amanises\_20 Start: 15793, Stop: 16731, Start Num: 15

Candidate Starts for Amanises\_20:

(Start: 15 @15793 has 69 MA's), (24, 15859), (26, 15868), (27, 15877), (37, 15934), (38, 15937), (40, 15955), (46, 16003), (51, 16048), (54, 16057), (63, 16099), (67, 16132), (69, 16147), (74, 16192), (82, 16237), (100, 16486), (109, 16561), (115, 16606), (122, 16672), (124, 16684), (126, 16708),

Gene: Amelia\_20 Start: 14633, Stop: 15586, Start Num: 15

Candidate Starts for Amelia\_20:

(1, 14417), (7, 14570), (Start: 13 @14627 has 9 MA's), (Start: 15 @14633 has 69 MA's), (24, 14708), (26, 14717), (28, 14732), (30, 14741), (37, 14783), (38, 14786), (40, 14804), (45, 14846), (46, 14852), (61, 14933), (67, 14984), (68, 14987), (69, 14999), (74, 15044), (84, 15098), (88, 15146), (89, 15194), (92, 15260), (104, 15389), (106, 15401), (109, 15416), (110, 15419), (120, 15503), (122, 15527), (123, 15530), (126, 15563),

Gene: AmiCi24\_18 Start: 14178, Stop: 15137, Start Num: 15

Candidate Starts for AmiCi24\_18:

(Start: 15 @14178 has 69 MA's), (24, 14250), (29, 14277), (31, 14292), (40, 14346), (46, 14394), (54, 14448), (61, 14475), (69, 14541), (70, 14547), (74, 14586), (78, 14607), (85, 14649), (104, 14940), (105, 14949), (106, 14952), (109, 14967), (118, 15030), (122, 15078),

Gene: Amphitrite\_18 Start: 14178, Stop: 15137, Start Num: 15

Candidate Starts for Amphitrite\_18:

(Start: 15 @14178 has 69 MA's), (24, 14250), (29, 14277), (31, 14292), (40, 14346), (46, 14394), (54, 14448), (61, 14475), (69, 14541), (70, 14547), (74, 14586), (78, 14607), (85, 14649), (104, 14940), (105, 14949), (106, 14952), (109, 14967), (118, 15030), (122, 15078),

Gene: Andrew\_19 Start: 14644, Stop: 15597, Start Num: 15

Candidate Starts for Andrew\_19:

(Start: 15 @14644 has 69 MA's), (24, 14716), (26, 14725), (28, 14740), (29, 14743), (38, 14794), (40, 14812), (54, 14914), (61, 14941), (68, 14995), (69, 15007), (70, 15013), (74, 15052), (79, 15073), (85, 15109), (91, 15232), (96, 15328), (100, 15352), (104, 15400), (106, 15412), (109, 15427), (115, 15472), (120, 15514), (122, 15538),

Gene: Anekin\_21 Start: 16896, Stop: 17858, Start Num: 15

Candidate Starts for Anekin\_21:

(4, 16785), (8, 16845), (Start: 10 @16869 has 7 MA's), (Start: 15 @16896 has 69 MA's), (16, 16905), (19, 16917), (22, 16950), (33, 17010), (46, 17106), (47, 17109), (50, 17133), (51, 17151), (56, 17166), (106, 17673), (117, 17748), (118, 17751), (127, 17841),

Gene: Antrice\_19 Start: 15181, Stop: 16131, Start Num: 15

Candidate Starts for Antrice\_19:

(2, 15004), (7, 15124), (Start: 15 @15181 has 69 MA's), (24, 15250), (30, 15283), (37, 15325), (38, 15328), (39, 15343), (40, 15346), (46, 15394), (63, 15490), (65, 15511), (69, 15538), (70, 15544), (75, 15592), (87, 15658), (89, 15736), (99, 15880), (107, 15949), (119, 16024), (122, 16069), (125, 16090), (126, 16105), (127, 16111),

Gene: ApoKipo\_72 Start: 43581, Stop: 44564, Start Num: 11

Candidate Starts for ApoKipo\_72:

(Start: 11 @43581 has 4 MA's), (20, 43653), (27, 43695), (37, 43752), (51, 43869), (53, 43875), (54, 43878), (61, 43905), (66, 43944), (68, 43962), (72, 44007), (76, 44034), (101, 44322), (109, 44394),

(111, 44400), (121, 44499),

Gene: Atlantica\_18 Start: 14180, Stop: 15139, Start Num: 15

Candidate Starts for Atlantica\_18:

(Start: 15 @14180 has 69 MA's), (24, 14252), (29, 14279), (31, 14294), (40, 14348), (46, 14396), (54, 14450), (61, 14477), (69, 14543), (70, 14549), (74, 14588), (78, 14609), (104, 14942), (105, 14951), (106, 14954), (109, 14969), (118, 15032), (122, 15080),

Gene: Auxilium\_22 Start: 16933, Stop: 17892, Start Num: 15

Candidate Starts for Auxilium\_22:

(Start: 15 @16933 has 69 MA's), (16, 16942), (55, 17197), (56, 17203), (58, 17212), (60, 17218), (63, 17239), (79, 17368), (94, 17608), (104, 17695), (117, 17782), (127, 17875),

Gene: Azaz\_18 Start: 14234, Stop: 15199, Start Num: 15

Candidate Starts for Azaz\_18:

(Start: 15 @14234 has 69 MA's), (24, 14306), (29, 14333), (30, 14339), (31, 14348), (38, 14384), (40, 14402), (46, 14450), (54, 14504), (61, 14531), (63, 14549), (67, 14582), (77, 14663), (104, 15002), (105, 15011), (106, 15014), (109, 15029), (122, 15140),

Gene: Babushka\_18 Start: 14233, Stop: 15198, Start Num: 15

Candidate Starts for Babushka\_18:

(6, 14167), (Start: 15 @14233 has 69 MA's), (24, 14305), (28, 14329), (29, 14332), (31, 14347), (40, 14401), (46, 14449), (54, 14503), (61, 14530), (67, 14581), (69, 14596), (70, 14602), (84, 14707), (91, 14833), (109, 15028), (118, 15091), (120, 15115), (122, 15139),

Gene: Basilisk\_19 Start: 15922, Stop: 16863, Start Num: 15

Candidate Starts for Basilisk\_19:

(Start: 15 @15922 has 69 MA's), (18, 15940), (24, 15988), (28, 16012), (30, 16021), (37, 16063), (39, 16081), (40, 16084), (46, 16132), (58, 16204), (69, 16276), (83, 16375), (109, 16693), (115, 16738), (122, 16804),

Gene: BasketStar\_22 Start: 16987, Stop: 17946, Start Num: 15

Candidate Starts for BasketStar\_22:

(Start: 15 @16987 has 69 MA's), (16, 16996), (19, 17008), (55, 17251), (56, 17257), (58, 17266), (60, 17272), (63, 17293), (79, 17422), (94, 17662), (104, 17749), (111, 17782), (117, 17836), (127, 17929),

Gene: Bedetta\_20 Start: 14633, Stop: 15586, Start Num: 15

Candidate Starts for Bedetta\_20:

(1, 14417), (7, 14570), (Start: 13 @14627 has 9 MA's), (Start: 15 @14633 has 69 MA's), (24, 14708), (26, 14717), (28, 14732), (30, 14741), (37, 14783), (38, 14786), (40, 14804), (45, 14846), (46, 14852), (61, 14933), (67, 14984), (68, 14987), (69, 14999), (74, 15044), (84, 15098), (88, 15146), (89, 15194), (92, 15260), (104, 15389), (106, 15401), (109, 15416), (110, 15419), (120, 15503), (122, 15527), (123, 15530), (126, 15563),

Gene: BenchScraper\_22 Start: 16948, Stop: 17907, Start Num: 15

Candidate Starts for BenchScraper\_22:

(Start: 15 @16948 has 69 MA's), (16, 16957), (19, 16969), (55, 17212), (56, 17218), (58, 17227), (60, 17233), (63, 17254), (79, 17383), (94, 17623), (104, 17710), (111, 17743), (117, 17797), (127, 17890),

Gene: Bhageatrice\_24 Start: 18223, Stop: 19182, Start Num: 15

Candidate Starts for Bhageatrice\_24:

(Start: 15 @18223 has 69 MA's), (16, 18232), (19, 18244), (55, 18487), (56, 18493), (58, 18502), (60, 18508), (63, 18529), (79, 18658), (95, 18910), (104, 18985), (127, 19165),

Gene: Bible12\_20 Start: 14636, Stop: 15589, Start Num: 15

Candidate Starts for Bible12\_20:

(1, 14420), (7, 14573), (Start: 13 @14630 has 9 MA's), (Start: 15 @14636 has 69 MA's), (24, 14711), (26, 14720), (28, 14735), (30, 14744), (37, 14786), (38, 14789), (40, 14807), (45, 14849), (46, 14855), (61, 14936), (67, 14987), (68, 14990), (69, 15002), (74, 15047), (84, 15101), (88, 15149), (89, 15197), (92, 15263), (104, 15392), (106, 15404), (109, 15419), (110, 15422), (120, 15506), (122, 15530), (123, 15533), (126, 15566),

Gene: BillyTP\_22 Start: 16717, Stop: 17676, Start Num: 15

Candidate Starts for BillyTP\_22:

(Start: 15 @16717 has 69 MA's), (16, 16726), (55, 16981), (56, 16987), (58, 16996), (60, 17002), (63, 17023), (79, 17152), (94, 17392), (104, 17479), (117, 17566), (127, 17659),

Gene: BlueShadow\_22 Start: 16933, Stop: 17892, Start Num: 15

Candidate Starts for BlueShadow\_22:

(Start: 15 @16933 has 69 MA's), (16, 16942), (19, 16954), (55, 17197), (56, 17203), (58, 17212), (60, 17218), (63, 17239), (79, 17368), (94, 17608), (104, 17695), (111, 17728), (117, 17782), (127, 17875),

Gene: Bridgette\_21 Start: 16995, Stop: 17957, Start Num: 15

Candidate Starts for Bridgette\_21:

(5, 16923), (Start: 10 @16968 has 7 MA's), (Start: 15 @16995 has 69 MA's), (19, 17016), (28, 17085), (50, 17232), (51, 17250), (56, 17265), (63, 17301), (69, 17358), (71, 17367), (86, 17478), (94, 17673), (104, 17760), (127, 17940),

Gene: Brynnie\_19 Start: 15734, Stop: 16675, Start Num: 15

Candidate Starts for Brynnie\_19:

(Start: 14 @15731 has 2 MA's), (Start: 15 @15734 has 69 MA's), (18, 15752), (24, 15800), (28, 15824), (30, 15833), (37, 15875), (39, 15893), (40, 15896), (46, 15944), (58, 16016), (69, 16088), (83, 16187), (109, 16505), (115, 16550), (122, 16616),

Gene: Camara\_18 Start: 14181, Stop: 15140, Start Num: 15

Candidate Starts for Camara\_18:

(Start: 15 @14181 has 69 MA's), (24, 14253), (29, 14280), (31, 14295), (40, 14349), (46, 14397), (54, 14451), (61, 14478), (69, 14544), (70, 14550), (74, 14589), (78, 14610), (104, 14943), (105, 14952), (106, 14955), (109, 14970), (118, 15033), (122, 15081),

Gene: Chickaboom\_18 Start: 14660, Stop: 15601, Start Num: 15

Candidate Starts for Chickaboom\_18:

(Start: 14 @14657 has 2 MA's), (Start: 15 @14660 has 69 MA's), (18, 14678), (24, 14726), (28, 14750), (30, 14759), (37, 14801), (39, 14819), (40, 14822), (46, 14870), (58, 14942), (69, 15014), (83, 15113), (109, 15431), (115, 15476), (122, 15542),

Gene: Chicken\_19 Start: 15671, Stop: 16609, Start Num: 15

Candidate Starts for Chicken\_19:

(Start: 15 @15671 has 69 MA's), (24, 15737), (26, 15746), (27, 15755), (37, 15812), (38, 15815), (40, 15833), (46, 15881), (54, 15935), (67, 16010), (69, 16025), (70, 16031), (74, 16070), (82, 16115), (100, 16364), (109, 16439), (115, 16484), (122, 16550), (124, 16562),

Gene: ChuckDuck\_21 Start: 16837, Stop: 17793, Start Num: 15

Candidate Starts for ChuckDuck\_21:

(Start: 10 @16810 has 7 MA's), (Start: 15 @16837 has 69 MA's), (19, 16858), (38, 16981), (56, 17107), (72, 17230), (73, 17233), (79, 17272), (85, 17305), (86, 17314), (94, 17509), (117, 17683), (127,

17776),

Gene: Colusalem\_19 Start: 14466, Stop: 15425, Start Num: 13

Candidate Starts for Colusalem\_19:

(1, 14256), (7, 14409), (Start: 13 @14466 has 9 MA's), (Start: 15 @14472 has 69 MA's), (24, 14547), (26, 14556), (28, 14571), (30, 14580), (37, 14622), (38, 14625), (40, 14643), (45, 14685), (46, 14691), (61, 14772), (67, 14823), (68, 14826), (69, 14838), (74, 14883), (84, 14937), (88, 14985), (89, 15033), (92, 15099), (104, 15228), (106, 15240), (109, 15255), (110, 15258), (120, 15342), (122, 15366), (123, 15369), (126, 15402),

Gene: Constance\_21 Start: 16977, Stop: 17933, Start Num: 15

Candidate Starts for Constance\_21:

(5, 16905), (Start: 10 @16950 has 7 MA's), (Start: 15 @16977 has 69 MA's), (19, 16998), (56, 17247), (69, 17334), (79, 17412), (86, 17454), (94, 17649), (104, 17736), (117, 17823), (127, 17916),

Gene: CookieBear\_22 Start: 16933, Stop: 17892, Start Num: 15

Candidate Starts for CookieBear\_22:

(Start: 15 @16933 has 69 MA's), (16, 16942), (55, 17197), (56, 17203), (58, 17212), (60, 17218), (63, 17239), (79, 17368), (94, 17608), (100, 17650), (104, 17695), (117, 17782), (127, 17875),

Gene: Coral\_19 Start: 14466, Stop: 15425, Start Num: 13

Candidate Starts for Coral\_19:

(1, 14256), (7, 14409), (Start: 13 @14466 has 9 MA's), (Start: 15 @14472 has 69 MA's), (24, 14547), (26, 14556), (28, 14571), (30, 14580), (37, 14622), (38, 14625), (40, 14643), (45, 14685), (46, 14691), (61, 14772), (67, 14823), (68, 14826), (69, 14838), (74, 14883), (84, 14937), (88, 14985), (89, 15033), (92, 15099), (104, 15228), (106, 15240), (109, 15255), (110, 15258), (120, 15342), (122, 15366), (123, 15369), (126, 15402),

Gene: CosmicBrownie\_22 Start: 16891, Stop: 17850, Start Num: 15

Candidate Starts for CosmicBrownie\_22:

(Start: 15 @16891 has 69 MA's), (16, 16900), (55, 17155), (56, 17161), (58, 17170), (60, 17176), (63, 17197), (69, 17248), (79, 17326), (94, 17566), (104, 17653), (117, 17740), (127, 17833),

Gene: Cote\_20 Start: 14627, Stop: 15586, Start Num: 13

Candidate Starts for Cote\_20:

(1, 14417), (7, 14570), (Start: 13 @14627 has 9 MA's), (Start: 15 @14633 has 69 MA's), (24, 14708), (26, 14717), (28, 14732), (30, 14741), (37, 14783), (38, 14786), (40, 14804), (45, 14846), (46, 14852), (61, 14933), (67, 14984), (68, 14987), (69, 14999), (74, 15044), (84, 15098), (88, 15146), (89, 15194), (92, 15260), (104, 15389), (106, 15401), (109, 15416), (110, 15419), (120, 15503), (122, 15527), (123, 15530), (126, 15563),

Gene: Crescenzo\_22 Start: 16824, Stop: 17786, Start Num: 15

Candidate Starts for Crescenzo\_22:

(4, 16713), (8, 16773), (Start: 10 @16797 has 7 MA's), (Start: 15 @16824 has 69 MA's), (16, 16833), (19, 16845), (22, 16878), (33, 16938), (46, 17034), (47, 17037), (50, 17061), (51, 17079), (56, 17094), (106, 17601), (117, 17676), (118, 17679), (127, 17769),

Gene: Cygnet\_19 Start: 15291, Stop: 16241, Start Num: 15

Candidate Starts for Cygnet\_19:

(2, 15114), (7, 15234), (Start: 15 @15291 has 69 MA's), (24, 15360), (30, 15393), (37, 15435), (38, 15438), (39, 15453), (40, 15456), (46, 15504), (63, 15600), (65, 15621), (69, 15648), (70, 15654), (75, 15702), (87, 15768), (89, 15846), (99, 15990), (107, 16059), (119, 16134), (122, 16179), (125, 16200), (126, 16215), (127, 16221),

Gene: DanHam62\_18 Start: 14180, Stop: 15139, Start Num: 15

Candidate Starts for DanHam62\_18:

(Start: 15 @14180 has 69 MA's), (24, 14252), (29, 14279), (31, 14294), (40, 14348), (46, 14396), (54, 14450), (61, 14477), (69, 14543), (70, 14549), (74, 14588), (78, 14609), (85, 14651), (104, 14942), (105, 14951), (106, 14954), (109, 14969), (118, 15032), (122, 15080),

Gene: Daob\_20 Start: 14630, Stop: 15589, Start Num: 13

Candidate Starts for Daob\_20:

(1, 14420), (7, 14573), (Start: 13 @14630 has 9 MA's), (Start: 15 @14636 has 69 MA's), (24, 14711), (26, 14720), (28, 14735), (30, 14744), (37, 14786), (38, 14789), (40, 14807), (45, 14849), (46, 14855), (61, 14936), (67, 14987), (68, 14990), (69, 15002), (74, 15047), (84, 15101), (88, 15149), (89, 15197), (92, 15263), (104, 15392), (106, 15404), (109, 15419), (110, 15422), (120, 15506), (122, 15530), (123, 15533), (126, 15566),

Gene: DarwinJr\_25 Start: 18128, Stop: 19090, Start Num: 15

Candidate Starts for DarwinJr\_25:

(4, 18017), (8, 18077), (Start: 10 @18101 has 7 MA's), (Start: 15 @18128 has 69 MA's), (16, 18137), (19, 18149), (22, 18182), (33, 18242), (46, 18338), (47, 18341), (50, 18365), (51, 18383), (56, 18398), (106, 18905), (117, 18980), (118, 18983), (127, 19073),

Gene: Ding\_22 Start: 16996, Stop: 17958, Start Num: 15

Candidate Starts for Ding\_22:

(4, 16885), (5, 16924), (8, 16945), (Start: 10 @16969 has 7 MA's), (Start: 15 @16996 has 69 MA's), (16, 17005), (19, 17017), (46, 17206), (47, 17209), (50, 17233), (51, 17251), (56, 17266), (63, 17302), (69, 17359), (106, 17773), (109, 17788), (127, 17941),

Gene: Edmundo\_70 Start: 43370, Stop: 44359, Start Num: 10

Candidate Starts for Edmundo\_70:

(Start: 10 @43370 has 7 MA's), (20, 43442), (23, 43460), (29, 43496), (36, 43532), (42, 43574), (44, 43604), (46, 43613), (48, 43625), (51, 43661), (53, 43667), (62, 43712), (68, 43754), (73, 43802), (90, 43985), (98, 44108), (113, 44222), (114, 44228), (128, 44354),

Gene: Eesa\_19 Start: 15885, Stop: 16823, Start Num: 15

Candidate Starts for Eesa\_19:

(Start: 15 @15885 has 69 MA's), (24, 15951), (26, 15960), (27, 15969), (37, 16026), (38, 16029), (40, 16047), (46, 16095), (51, 16140), (54, 16149), (67, 16224), (69, 16239), (74, 16284), (82, 16329), (100, 16578), (109, 16653), (115, 16698), (122, 16764), (124, 16776), (126, 16800),

Gene: Eileen\_21 Start: 16939, Stop: 17895, Start Num: 15

Candidate Starts for Eileen\_21:

(Start: 15 @16939 has 69 MA's), (19, 16960), (33, 17053), (56, 17209), (59, 17221), (69, 17296), (79, 17374), (85, 17407), (86, 17416), (94, 17611), (104, 17698), (127, 17878),

Gene: Fingolfin\_18 Start: 14181, Stop: 15140, Start Num: 15

Candidate Starts for Fingolfin\_18:

(Start: 15 @14181 has 69 MA's), (24, 14253), (29, 14280), (31, 14295), (40, 14349), (46, 14397), (54, 14451), (61, 14478), (69, 14544), (70, 14550), (74, 14589), (78, 14610), (104, 14943), (105, 14952), (106, 14955), (109, 14970), (118, 15033), (122, 15081),

Gene: FosterFrank\_21 Start: 16935, Stop: 17891, Start Num: 15

Candidate Starts for FosterFrank\_21:

(5, 16863), (8, 16884), (Start: 10 @16908 has 7 MA's), (Start: 15 @16935 has 69 MA's), (19, 16956), (56, 17205), (69, 17292), (79, 17370), (86, 17412), (94, 17607), (104, 17694), (117, 17781), (127, 17874),

Gene: Globfish\_22 Start: 17006, Stop: 17965, Start Num: 15

Candidate Starts for Globfish\_22:

(4, 16895), (5, 16934), (8, 16955), (Start: 10 @16979 has 7 MA's), (Start: 15 @17006 has 69 MA's), (16, 17015), (19, 17027), (33, 17120), (63, 17312), (69, 17363), (79, 17441), (94, 17681), (100, 17723), (104, 17768), (106, 17780), (117, 17855), (127, 17948),

Gene: GlobiWarming\_21 Start: 16931, Stop: 17893, Start Num: 15

Candidate Starts for GlobiWarming\_21:

(Start: 10 @16904 has 7 MA's), (Start: 15 @16931 has 69 MA's), (19, 16952), (28, 17021), (50, 17168), (51, 17186), (56, 17201), (63, 17237), (65, 17258), (69, 17294), (71, 17303), (86, 17414), (94, 17609), (104, 17696), (127, 17876),

Gene: Glotell\_18 Start: 14178, Stop: 15137, Start Num: 15

Candidate Starts for Glotell\_18:

(Start: 15 @14178 has 69 MA's), (24, 14250), (29, 14277), (31, 14292), (40, 14346), (46, 14394), (54, 14448), (61, 14475), (69, 14541), (70, 14547), (74, 14586), (78, 14607), (85, 14649), (104, 14940), (105, 14949), (106, 14952), (109, 14967), (118, 15030), (122, 15078),

Gene: Gorpy\_22 Start: 16942, Stop: 17901, Start Num: 15

Candidate Starts for Gorpy\_22:

(Start: 15 @16942 has 69 MA's), (16, 16951), (55, 17206), (56, 17212), (58, 17221), (60, 17227), (63, 17248), (79, 17377), (94, 17617), (104, 17704), (117, 17791), (127, 17884),

Gene: Gravel\_20 Start: 15791, Stop: 16729, Start Num: 15

Candidate Starts for Gravel\_20:

(Start: 15 @15791 has 69 MA's), (24, 15857), (26, 15866), (27, 15875), (37, 15932), (38, 15935), (40, 15953), (46, 16001), (51, 16046), (54, 16055), (67, 16130), (69, 16145), (74, 16190), (82, 16235), (100, 16484), (109, 16559), (115, 16604), (122, 16670), (124, 16682), (126, 16706),

Gene: GumGum\_22 Start: 16882, Stop: 17841, Start Num: 15

Candidate Starts for GumGum\_22:

(Start: 15 @16882 has 69 MA's), (16, 16891), (55, 17146), (56, 17152), (58, 17161), (60, 17167), (63, 17188), (69, 17239), (79, 17317), (94, 17557), (102, 17605), (104, 17644), (117, 17731), (127, 17824),

Gene: HamCheese\_18 Start: 14180, Stop: 15139, Start Num: 15

Candidate Starts for HamCheese\_18:

(Start: 15 @14180 has 69 MA's), (24, 14252), (29, 14279), (31, 14294), (40, 14348), (46, 14396), (54, 14450), (61, 14477), (69, 14543), (70, 14549), (74, 14588), (78, 14609), (85, 14651), (104, 14942), (105, 14951), (106, 14954), (109, 14969), (118, 15032), (122, 15080),

Gene: HannahPhantana\_20 Start: 14630, Stop: 15589, Start Num: 13

Candidate Starts for HannahPhantana\_20:

(1, 14420), (7, 14573), (Start: 13 @14630 has 9 MA's), (Start: 15 @14636 has 69 MA's), (24, 14711), (26, 14720), (28, 14735), (30, 14744), (37, 14786), (38, 14789), (40, 14807), (45, 14849), (46, 14855), (61, 14936), (67, 14987), (68, 14990), (69, 15002), (74, 15047), (84, 15101), (88, 15149), (89, 15197), (92, 15263), (104, 15392), (106, 15404), (109, 15419), (110, 15422), (120, 15506), (122, 15530), (123, 15533), (126, 15566),

Gene: Henrique\_21 Start: 16956, Stop: 17918, Start Num: 15

Candidate Starts for Henrique\_21:

(Start: 10 @16929 has 7 MA's), (Start: 15 @16956 has 69 MA's), (19, 16977), (28, 17046), (50, 17193), (51, 17211), (56, 17226), (63, 17262), (69, 17319), (71, 17328), (86, 17439), (94, 17634), (104, 17721), (127, 17901),

Gene: Hestia\_22 Start: 17111, Stop: 18070, Start Num: 15

Candidate Starts for Hestia\_22:

(Start: 15 @17111 has 69 MA's), (16, 17120), (55, 17375), (56, 17381), (58, 17390), (60, 17396), (63, 17417), (69, 17468), (79, 17546), (94, 17786), (104, 17873), (117, 17960), (127, 18053),

Gene: Hillester\_22 Start: 16933, Stop: 17892, Start Num: 15

Candidate Starts for Hillester\_22:

(Start: 15 @16933 has 69 MA's), (16, 16942), (55, 17197), (56, 17203), (58, 17212), (60, 17218), (63, 17239), (79, 17368), (94, 17608), (104, 17695), (106, 17707), (117, 17782), (119, 17788), (127, 17875),

Gene: HotPotato\_21 Start: 16939, Stop: 17901, Start Num: 15

Candidate Starts for HotPotato\_21:

(Start: 10 @16912 has 7 MA's), (Start: 15 @16939 has 69 MA's), (19, 16960), (50, 17176), (56, 17209), (63, 17245), (69, 17302), (71, 17311), (86, 17422), (94, 17617), (104, 17704), (127, 17884),

Gene: Isolde\_22 Start: 16768, Stop: 17727, Start Num: 15

Candidate Starts for Isolde\_22:

(Start: 15 @16768 has 69 MA's), (16, 16777), (19, 16789), (55, 17032), (56, 17038), (58, 17047), (60, 17053), (63, 17074), (79, 17203), (94, 17443), (100, 17485), (104, 17530), (117, 17617), (127, 17710),

Gene: Jamun\_19 Start: 15328, Stop: 16269, Start Num: 15

Candidate Starts for Jamun\_19:

(Start: 14 @15325 has 2 MA's), (Start: 15 @15328 has 69 MA's), (18, 15346), (24, 15394), (28, 15418), (30, 15427), (37, 15469), (39, 15487), (40, 15490), (46, 15538), (58, 15610), (69, 15682), (83, 15781), (109, 16099), (115, 16144), (122, 16210),

Gene: JellyBread\_22 Start: 16926, Stop: 17885, Start Num: 15

Candidate Starts for JellyBread\_22:

(Start: 15 @16926 has 69 MA's), (16, 16935), (55, 17190), (56, 17196), (58, 17205), (60, 17211), (63, 17232), (79, 17361), (94, 17601), (104, 17688), (117, 17775), (127, 17868),

Gene: Jerole\_20 Start: 14627, Stop: 15586, Start Num: 13

Candidate Starts for Jerole\_20:

(1, 14417), (7, 14570), (Start: 13 @14627 has 9 MA's), (Start: 15 @14633 has 69 MA's), (24, 14708), (26, 14717), (28, 14732), (30, 14741), (37, 14783), (38, 14786), (40, 14804), (45, 14846), (46, 14852), (61, 14933), (67, 14984), (68, 14987), (69, 14999), (74, 15044), (84, 15098), (88, 15146), (89, 15194), (92, 15260), (104, 15389), (106, 15401), (109, 15416), (110, 15419), (120, 15503), (122, 15527), (123, 15530), (126, 15563),

Gene: Judy\_22 Start: 17248, Stop: 18204, Start Num: 15

Candidate Starts for Judy\_22:

(5, 17176), (Start: 10 @17221 has 7 MA's), (Start: 15 @17248 has 69 MA's), (19, 17269), (56, 17518), (69, 17605), (79, 17683), (86, 17725), (94, 17920), (97, 17944), (104, 18007), (127, 18187),

Gene: Juno112\_18 Start: 14181, Stop: 15140, Start Num: 15

Candidate Starts for Juno112\_18:

(Start: 15 @14181 has 69 MA's), (24, 14253), (29, 14280), (31, 14295), (40, 14349), (46, 14397), (54, 14451), (61, 14478), (69, 14544), (70, 14550), (74, 14589), (78, 14610), (104, 14943), (105, 14952), (106, 14955), (109, 14970), (118, 15033), (122, 15081),

Gene: KHumphrey\_18 Start: 14178, Stop: 15137, Start Num: 15

Candidate Starts for KHumphrey\_18:

(Start: 15 @14178 has 69 MA's), (24, 14250), (29, 14277), (31, 14292), (40, 14346), (46, 14394), (54, 14448), (61, 14475), (69, 14541), (70, 14547), (74, 14586), (78, 14607), (104, 14940), (105, 14949), (106, 14952), (109, 14967), (118, 15030), (122, 15078),

Gene: Kabloowy\_22 Start: 17122, Stop: 18081, Start Num: 15

Candidate Starts for Kabloowy\_22:

(Start: 15 @17122 has 69 MA's), (16, 17131), (55, 17386), (56, 17392), (58, 17401), (60, 17407), (63, 17428), (79, 17557), (94, 17797), (100, 17839), (104, 17884), (106, 17896), (117, 17971), (127, 18064),

Gene: Karkharias\_21 Start: 16935, Stop: 17897, Start Num: 15

Candidate Starts for Karkharias\_21:

(5, 16863), (Start: 10 @16908 has 7 MA's), (Start: 15 @16935 has 69 MA's), (19, 16956), (28, 17025), (50, 17172), (51, 17190), (56, 17205), (63, 17241), (69, 17298), (71, 17307), (86, 17418), (94, 17613), (104, 17700), (127, 17880),

Gene: KayMoney\_21 Start: 16839, Stop: 17795, Start Num: 15

Candidate Starts for KayMoney\_21:

(Start: 10 @16812 has 7 MA's), (Start: 15 @16839 has 69 MA's), (19, 16860), (38, 16983), (56, 17109), (72, 17232), (73, 17235), (79, 17274), (85, 17307), (86, 17316), (94, 17511), (104, 17598), (117, 17685), (127, 17778),

Gene: KendraB23\_20 Start: 15792, Stop: 16730, Start Num: 15

Candidate Starts for KendraB23\_20:

(Start: 15 @15792 has 69 MA's), (24, 15858), (26, 15867), (27, 15876), (37, 15933), (38, 15936), (40, 15954), (46, 16002), (51, 16047), (54, 16056), (63, 16098), (67, 16131), (69, 16146), (74, 16191), (82, 16236), (100, 16485), (109, 16560), (115, 16605), (122, 16671), (124, 16683), (126, 16707),

Gene: Kepler\_19 Start: 14465, Stop: 15424, Start Num: 13

Candidate Starts for Kepler\_19:

(1, 14255), (7, 14408), (Start: 13 @14465 has 9 MA's), (Start: 15 @14471 has 69 MA's), (24, 14546), (26, 14555), (28, 14570), (30, 14579), (37, 14621), (38, 14624), (40, 14642), (45, 14684), (46, 14690), (61, 14771), (67, 14822), (68, 14825), (69, 14837), (74, 14882), (84, 14936), (88, 14984), (89, 15032), (92, 15098), (104, 15227), (106, 15239), (109, 15254), (110, 15257), (120, 15341), (122, 15365), (123, 15368), (126, 15401),

Gene: Kharcho\_46 Start: 25166, Stop: 26164, Start Num: 11

Candidate Starts for Kharcho\_46:

(Start: 11 @25166 has 4 MA's), (33, 25307), (43, 25367), (47, 25406), (54, 25460), (57, 25475), (65, 25526), (114, 26030),

Gene: Kovu\_68 Start: 43241, Stop: 44224, Start Num: 11

Candidate Starts for Kovu\_68:

(Start: 11 @43241 has 4 MA's), (20, 43313), (27, 43355), (37, 43412), (51, 43529), (53, 43535), (54, 43538), (61, 43565), (66, 43604), (68, 43622), (72, 43667), (73, 43670), (76, 43694), (93, 43925), (101, 43982), (103, 44024), (107, 44045), (109, 44054), (121, 44159),

Gene: Kuleana\_19 Start: 14642, Stop: 15589, Start Num: 15

Candidate Starts for Kuleana\_19:

(1, 14432), (7, 14585), (Start: 14 @14639 has 2 MA's), (Start: 15 @14642 has 69 MA's), (24, 14708), (30, 14741), (31, 14750), (37, 14783), (40, 14804), (46, 14852), (63, 14948), (87, 15116), (89, 15194), (99, 15338), (104, 15389), (107, 15407), (122, 15527), (125, 15548), (126, 15563),

Gene: Laphuphu24k\_18 Start: 14180, Stop: 15139, Start Num: 15

Candidate Starts for Laphuphu24k\_18:

(Start: 15 @14180 has 69 MA's), (24, 14252), (29, 14279), (31, 14294), (40, 14348), (46, 14396), (54, 14450), (61, 14477), (69, 14543), (70, 14549), (74, 14588), (78, 14609), (85, 14651), (104, 14942), (105, 14951), (106, 14954), (109, 14969), (118, 15032), (122, 15080),

Gene: Laroye\_70 Start: 42761, Stop: 43750, Start Num: 10

Candidate Starts for Laroye\_70:

(Start: 10 @42761 has 7 MA's), (29, 42887), (36, 42923), (44, 42995), (46, 43004), (48, 43016), (53, 43058), (61, 43088), (62, 43103), (73, 43193), (90, 43376), (98, 43499), (106, 43565), (113, 43613), (114, 43619), (128, 43745),

Gene: Lasker\_22 Start: 16941, Stop: 17900, Start Num: 15

Candidate Starts for Lasker\_22:

(Start: 15 @16941 has 69 MA's), (16, 16950), (19, 16962), (55, 17205), (56, 17211), (58, 17220), (60, 17226), (63, 17247), (79, 17376), (94, 17616), (104, 17703), (111, 17736), (117, 17790), (127, 17883),

Gene: Lawnathon\_22 Start: 16862, Stop: 17821, Start Num: 15

Candidate Starts for Lawnathon\_22:

(Start: 15 @16862 has 69 MA's), (16, 16871), (55, 17126), (56, 17132), (58, 17141), (60, 17147), (63, 17168), (79, 17297), (94, 17537), (104, 17624), (117, 17711), (127, 17804),

Gene: LeBruni\_23 Start: 16733, Stop: 17695, Start Num: 15

Candidate Starts for LeBruni\_23:

(8, 16682), (Start: 10 @16706 has 7 MA's), (Start: 15 @16733 has 69 MA's), (16, 16742), (19, 16754), (46, 16943), (47, 16946), (50, 16970), (56, 17003), (59, 17015), (63, 17039), (69, 17096), (73, 17135), (86, 17216), (94, 17411), (109, 17525), (118, 17588), (127, 17678),

Gene: Leona\_18 Start: 14234, Stop: 15199, Start Num: 15

Candidate Starts for Leona\_18:

(Start: 15 @14234 has 69 MA's), (24, 14306), (29, 14333), (30, 14339), (31, 14348), (38, 14384), (40, 14402), (46, 14450), (54, 14504), (61, 14531), (63, 14549), (67, 14582), (77, 14663), (104, 15002), (105, 15011), (106, 15014), (109, 15029), (122, 15140),

Gene: LiSara\_67 Start: 42923, Stop: 43912, Start Num: 10

Candidate Starts for LiSara\_67:

(Start: 10 @42923 has 7 MA's), (29, 43049), (36, 43085), (44, 43157), (46, 43166), (48, 43178), (53, 43220), (61, 43250), (62, 43265), (73, 43355), (90, 43538), (98, 43661), (106, 43727), (113, 43775), (114, 43781), (128, 43907),

Gene: LilyBell\_21 Start: 16951, Stop: 17913, Start Num: 15

Candidate Starts for LilyBell\_21:

(5, 16879), (Start: 10 @16924 has 7 MA's), (Start: 15 @16951 has 69 MA's), (19, 16972), (28, 17041), (46, 17161), (50, 17188), (51, 17206), (56, 17221), (63, 17257), (69, 17314), (71, 17323), (81, 17410), (86, 17434), (94, 17629), (104, 17716), (127, 17896),

Gene: LittleRon\_21 Start: 16809, Stop: 17765, Start Num: 15

Candidate Starts for LittleRon\_21:

(Start: 10 @16782 has 7 MA's), (Start: 15 @16809 has 69 MA's), (19, 16830), (38, 16953), (56, 17079), (72, 17202), (73, 17205), (79, 17244), (85, 17277), (86, 17286), (94, 17481), (104, 17568), (117, 17655), (127, 17748),

Gene: LittleTokyo\_19 Start: 14585, Stop: 15535, Start Num: 14

Candidate Starts for LittleTokyo\_19:

(12, 14576), (Start: 14 @14585 has 2 MA's), (Start: 15 @14588 has 69 MA's), (24, 14654), (25, 14657), (29, 14681), (30, 14687), (31, 14696), (37, 14729), (40, 14750), (49, 14816), (54, 14852), (63, 14894), (68, 14930), (69, 14942), (70, 14948), (87, 15062), (91, 15170), (99, 15284), (104, 15335), (107, 15353), (122, 15473), (124, 15485), (125, 15494), (126, 15509),

Gene: Lunar\_20 Start: 14633, Stop: 15586, Start Num: 15

Candidate Starts for Lunar\_20:

(1, 14417), (7, 14570), (Start: 13 @14627 has 9 MA's), (Start: 15 @14633 has 69 MA's), (24, 14708), (26, 14717), (28, 14732), (30, 14741), (37, 14783), (38, 14786), (40, 14804), (45, 14846), (46, 14852), (61, 14933), (67, 14984), (68, 14987), (69, 14999), (74, 15044), (84, 15098), (88, 15146), (89, 15194), (92, 15260), (104, 15389), (106, 15401), (109, 15416), (110, 15419), (120, 15503), (122, 15527), (123, 15530), (126, 15563),

Gene: MUWow\_21 Start: 17026, Stop: 17985, Start Num: 15

Candidate Starts for MUWow\_21:

(Start: 15 @17026 has 69 MA's), (16, 17035), (19, 17047), (55, 17290), (56, 17296), (58, 17305), (60, 17311), (63, 17332), (79, 17461), (94, 17701), (100, 17743), (104, 17788), (112, 17830), (117, 17875), (127, 17968),

Gene: Mapleville\_22 Start: 16932, Stop: 17891, Start Num: 15

Candidate Starts for Mapleville\_22:

(Start: 15 @16932 has 69 MA's), (16, 16941), (55, 17196), (56, 17202), (58, 17211), (60, 17217), (63, 17238), (79, 17367), (94, 17607), (104, 17694), (117, 17781), (127, 17874),

Gene: MaterMagnus\_22 Start: 16934, Stop: 17893, Start Num: 15

Candidate Starts for MaterMagnus\_22:

(Start: 15 @16934 has 69 MA's), (16, 16943), (19, 16955), (55, 17198), (56, 17204), (58, 17213), (60, 17219), (63, 17240), (79, 17369), (94, 17609), (104, 17696), (117, 17783), (127, 17876),

Gene: Melons\_20 Start: 14627, Stop: 15586, Start Num: 13

Candidate Starts for Melons\_20:

(1, 14417), (7, 14570), (Start: 13 @14627 has 9 MA's), (Start: 15 @14633 has 69 MA's), (24, 14708), (26, 14717), (28, 14732), (30, 14741), (37, 14783), (38, 14786), (40, 14804), (45, 14846), (46, 14852), (61, 14933), (67, 14984), (68, 14987), (69, 14999), (74, 15044), (84, 15098), (88, 15146), (89, 15194), (92, 15260), (104, 15389), (106, 15401), (109, 15416), (110, 15419), (120, 15503), (122, 15527), (123, 15530), (126, 15563),

Gene: MidnightRain\_22 Start: 16932, Stop: 17891, Start Num: 15

Candidate Starts for MidnightRain\_22:

(Start: 15 @16932 has 69 MA's), (16, 16941), (55, 17196), (56, 17202), (58, 17211), (60, 17217), (63, 17238), (79, 17367), (94, 17607), (100, 17649), (104, 17694), (117, 17781), (127, 17874),

Gene: MurphyJoseph\_22 Start: 17017, Stop: 17979, Start Num: 15

Candidate Starts for MurphyJoseph\_22:

(4, 16906), (8, 16966), (Start: 10 @16990 has 7 MA's), (Start: 15 @17017 has 69 MA's), (16, 17026), (19, 17038), (22, 17071), (33, 17131), (41, 17185), (47, 17230), (50, 17254), (51, 17272), (63, 17323),

(106, 17794), (117, 17869), (118, 17872), (127, 17962),

Gene: NewKitty\_23 Start: 17163, Stop: 18122, Start Num: 15

Candidate Starts for NewKitty\_23:

(Start: 15 @17163 has 69 MA's), (16, 17172), (55, 17427), (56, 17433), (58, 17442), (60, 17448), (63, 17469), (69, 17520), (79, 17598), (94, 17838), (104, 17925), (117, 18012), (127, 18105),

Gene: Niblet\_19 Start: 15671, Stop: 16609, Start Num: 15

Candidate Starts for Niblet\_19:

(Start: 15 @15671 has 69 MA's), (24, 15737), (26, 15746), (27, 15755), (37, 15812), (38, 15815), (40, 15833), (46, 15881), (54, 15935), (67, 16010), (69, 16025), (70, 16031), (74, 16070), (82, 16115), (100, 16364), (109, 16439), (115, 16484), (122, 16550), (124, 16562),

Gene: NidoQ\_21 Start: 16991, Stop: 17947, Start Num: 15

Candidate Starts for NidoQ\_21:

(5, 16919), (Start: 10 @16964 has 7 MA's), (Start: 15 @16991 has 69 MA's), (19, 17012), (56, 17261), (69, 17348), (79, 17426), (86, 17468), (94, 17663), (104, 17750), (117, 17837), (127, 17930),

Gene: NikkiHotWheels\_21 Start: 16952, Stop: 17914, Start Num: 15

Candidate Starts for NikkiHotWheels\_21:

(Start: 10 @16925 has 7 MA's), (Start: 15 @16952 has 69 MA's), (19, 16973), (28, 17042), (50, 17189), (51, 17207), (56, 17222), (63, 17258), (65, 17279), (69, 17315), (71, 17324), (81, 17411), (86, 17435), (94, 17630), (104, 17717), (127, 17897),

Gene: Nyilah\_21 Start: 16923, Stop: 17882, Start Num: 15

Candidate Starts for Nyilah\_21:

(Start: 15 @16923 has 69 MA's), (16, 16932), (55, 17187), (56, 17193), (58, 17202), (60, 17208), (63, 17229), (69, 17280), (79, 17358), (94, 17598), (104, 17685), (117, 17772), (127, 17865),

Gene: Oppalora\_18 Start: 14178, Stop: 15137, Start Num: 15

Candidate Starts for Oppalora\_18:

(Start: 15 @14178 has 69 MA's), (24, 14250), (29, 14277), (31, 14292), (40, 14346), (46, 14394), (54, 14448), (61, 14475), (69, 14541), (70, 14547), (74, 14586), (78, 14607), (85, 14649), (104, 14940), (105, 14949), (106, 14952), (109, 14967), (118, 15030), (122, 15078),

Gene: Orcanus\_19 Start: 15585, Stop: 16523, Start Num: 15

Candidate Starts for Orcanus\_19:

(Start: 15 @15585 has 69 MA's), (24, 15651), (26, 15660), (27, 15669), (37, 15726), (38, 15729), (40, 15747), (46, 15795), (51, 15840), (54, 15849), (67, 15924), (69, 15939), (70, 15945), (74, 15984), (82, 16029), (100, 16278), (109, 16353), (115, 16398), (122, 16464), (124, 16476), (126, 16500),

Gene: OtsoOtso\_19 Start: 14475, Stop: 15428, Start Num: 15

Candidate Starts for OtsoOtso\_19:

(Start: 13 @14469 has 9 MA's), (Start: 15 @14475 has 69 MA's), (24, 14550), (26, 14559), (28, 14574), (38, 14628), (40, 14646), (45, 14688), (46, 14694), (61, 14775), (67, 14826), (68, 14829), (69, 14841), (74, 14886), (84, 14940), (88, 14988), (89, 15036), (92, 15102), (104, 15231), (106, 15243), (109, 15258), (110, 15261), (120, 15345), (122, 15369), (123, 15372), (126, 15405),

Gene: Ottawa\_46 Start: 25164, Stop: 26162, Start Num: 11

Candidate Starts for Ottawa\_46:

(Start: 11 @25164 has 4 MA's), (33, 25305), (43, 25365), (47, 25404), (54, 25458), (57, 25473), (65, 25524), (114, 26028),

Gene: Peas\_21 Start: 16939, Stop: 17895, Start Num: 15

Candidate Starts for Peas\_21:

(Start: 15 @16939 has 69 MA's), (19, 16960), (33, 17053), (56, 17209), (59, 17221), (69, 17296), (79, 17374), (85, 17407), (86, 17416), (94, 17611), (104, 17698), (127, 17878),

Gene: PeggyLeg03\_21 Start: 16977, Stop: 17933, Start Num: 15

Candidate Starts for PeggyLeg03\_21:

(5, 16905), (Start: 10 @16950 has 7 MA's), (Start: 15 @16977 has 69 MA's), (17, 16989), (19, 16998), (56, 17247), (69, 17334), (79, 17412), (86, 17454), (94, 17649), (104, 17736), (117, 17823), (127, 17916),

Gene: Pelletreau\_20 Start: 15791, Stop: 16729, Start Num: 15

Candidate Starts for Pelletreau\_20:

(Start: 15 @15791 has 69 MA's), (24, 15857), (26, 15866), (27, 15875), (37, 15932), (38, 15935), (40, 15953), (46, 16001), (51, 16046), (54, 16055), (67, 16130), (69, 16145), (74, 16190), (82, 16235), (100, 16484), (109, 16559), (115, 16604), (122, 16670), (124, 16682), (126, 16706),

Gene: Persistence\_21 Start: 16854, Stop: 17816, Start Num: 15

Candidate Starts for Persistence\_21:

(4, 16743), (5, 16782), (8, 16803), (Start: 10 @16827 has 7 MA's), (Start: 15 @16854 has 69 MA's), (16, 16863), (19, 16875), (22, 16908), (46, 17064), (50, 17091), (56, 17124), (63, 17160), (69, 17217), (79, 17295), (106, 17631), (109, 17646), (111, 17652), (120, 17733), (127, 17799),

Gene: PhirstandPhine\_20 Start: 14633, Stop: 15586, Start Num: 15

Candidate Starts for PhirstandPhine\_20:

(1, 14417), (7, 14570), (Start: 13 @14627 has 9 MA's), (Start: 15 @14633 has 69 MA's), (24, 14708), (26, 14717), (28, 14732), (30, 14741), (37, 14783), (38, 14786), (40, 14804), (45, 14846), (46, 14852), (61, 14933), (67, 14984), (68, 14987), (69, 14999), (74, 15044), (84, 15098), (88, 15146), (89, 15194), (92, 15260), (104, 15389), (106, 15401), (109, 15416), (110, 15419), (120, 15503), (122, 15527), (123, 15530), (126, 15563),

Gene: PhluffyCoco\_18 Start: 14180, Stop: 15139, Start Num: 15

Candidate Starts for PhluffyCoco\_18:

(Start: 15 @14180 has 69 MA's), (24, 14252), (29, 14279), (31, 14294), (40, 14348), (46, 14396), (54, 14450), (61, 14477), (69, 14543), (70, 14549), (74, 14588), (78, 14609), (85, 14651), (104, 14942), (105, 14951), (106, 14954), (109, 14969), (118, 15032), (122, 15080),

Gene: Phrank15\_21 Start: 16867, Stop: 17826, Start Num: 15

Candidate Starts for Phrank15\_21:

(Start: 15 @16867 has 69 MA's), (16, 16876), (19, 16888), (55, 17131), (56, 17137), (58, 17146), (60, 17152), (63, 17173), (79, 17302), (94, 17542), (100, 17584), (104, 17629), (117, 17716), (127, 17809),

Gene: Pineda\_20 Start: 14633, Stop: 15586, Start Num: 15

Candidate Starts for Pineda\_20:

(1, 14417), (7, 14570), (Start: 13 @14627 has 9 MA's), (Start: 15 @14633 has 69 MA's), (24, 14708), (26, 14717), (28, 14732), (30, 14741), (37, 14783), (38, 14786), (40, 14804), (45, 14846), (46, 14852), (61, 14933), (67, 14984), (68, 14987), (69, 14999), (74, 15044), (84, 15098), (88, 15146), (89, 15194), (92, 15260), (104, 15389), (106, 15401), (109, 15416), (110, 15419), (120, 15503), (122, 15527), (123, 15530), (126, 15563),

Gene: Polka\_19 Start: 14469, Stop: 15428, Start Num: 13

Candidate Starts for Polka\_19:

(Start: 13 @14469 has 9 MA's), (Start: 15 @14475 has 69 MA's), (24, 14550), (26, 14559), (28, 14574), (38, 14628), (40, 14646), (45, 14688), (46, 14694), (61, 14775), (67, 14826), (68, 14829), (69, 14841), (74, 14886), (84, 14940), (88, 14988), (89, 15036), (92, 15102), (104, 15231), (106, 15243), (109, 15258), (110, 15261), (120, 15345), (122, 15369), (123, 15372), (126, 15405),

Gene: Pucara\_21 Start: 16938, Stop: 17894, Start Num: 15

Candidate Starts for Pucara\_21:

(Start: 10 @16911 has 7 MA's), (Start: 15 @16938 has 69 MA's), (19, 16959), (33, 17052), (56, 17208), (59, 17220), (69, 17295), (79, 17373), (85, 17406), (86, 17415), (94, 17610), (104, 17697), (127, 17877),

Gene: RadFad\_22 Start: 16933, Stop: 17892, Start Num: 15

Candidate Starts for RadFad\_22:

(Start: 15 @16933 has 69 MA's), (16, 16942), (55, 17197), (56, 17203), (58, 17212), (60, 17218), (63, 17239), (79, 17368), (94, 17608), (104, 17695), (106, 17707), (117, 17782), (119, 17788), (127, 17875),

Gene: Raphaella\_22 Start: 16933, Stop: 17892, Start Num: 15

Candidate Starts for Raphaella\_22:

(Start: 15 @16933 has 69 MA's), (16, 16942), (55, 17197), (56, 17203), (58, 17212), (60, 17218), (63, 17239), (79, 17368), (94, 17608), (104, 17695), (117, 17782), (127, 17875),

Gene: Rattail\_18 Start: 14234, Stop: 15199, Start Num: 15

Candidate Starts for Rattail\_18:

(Start: 15 @14234 has 69 MA's), (24, 14306), (29, 14333), (30, 14339), (31, 14348), (38, 14384), (40, 14402), (46, 14450), (54, 14504), (61, 14531), (63, 14549), (67, 14582), (77, 14663), (104, 15002), (105, 15011), (106, 15014), (109, 15029), (122, 15140),

Gene: RedFox\_18 Start: 14180, Stop: 15139, Start Num: 15

Candidate Starts for RedFox\_18:

(Start: 15 @14180 has 69 MA's), (24, 14252), (29, 14279), (31, 14294), (40, 14348), (46, 14396), (54, 14450), (61, 14477), (69, 14543), (70, 14549), (74, 14588), (78, 14609), (85, 14651), (104, 14942), (105, 14951), (106, 14954), (109, 14969), (118, 15032), (122, 15080),

Gene: Renna12\_19 Start: 14524, Stop: 15489, Start Num: 15

Candidate Starts for Renna12\_19:

(Start: 15 @14524 has 69 MA's), (24, 14596), (28, 14620), (29, 14623), (31, 14638), (38, 14674), (40, 14692), (46, 14740), (54, 14794), (61, 14821), (69, 14887), (70, 14893), (104, 15292), (106, 15304), (109, 15319), (118, 15382), (120, 15406), (122, 15430),

Gene: Richie\_22 Start: 16948, Stop: 17907, Start Num: 15

Candidate Starts for Richie\_22:

(Start: 15 @16948 has 69 MA's), (16, 16957), (19, 16969), (55, 17212), (56, 17218), (58, 17227), (60, 17233), (63, 17254), (79, 17383), (94, 17623), (104, 17710), (111, 17743), (117, 17797), (127, 17890),

Gene: Ruchi\_19 Start: 15868, Stop: 16809, Start Num: 15

Candidate Starts for Ruchi\_19:

(Start: 14 @15865 has 2 MA's), (Start: 15 @15868 has 69 MA's), (18, 15886), (24, 15934), (28, 15958), (30, 15967), (37, 16009), (39, 16027), (40, 16030), (46, 16078), (58, 16150), (69, 16222), (83, 16321), (109, 16639), (115, 16684), (116, 16696), (122, 16750),

Gene: Sakai\_22 Start: 16942, Stop: 17901, Start Num: 15

Candidate Starts for Sakai\_22:

(Start: 15 @16942 has 69 MA's), (16, 16951), (55, 17206), (56, 17212), (58, 17221), (60, 17227), (63, 17248), (79, 17377), (94, 17617), (104, 17704), (117, 17791), (127, 17884),

Gene: Salgado\_70 Start: 42577, Stop: 43566, Start Num: 10

Candidate Starts for Salgado\_70:

(3, 42478), (Start: 10 @42577 has 7 MA's), (29, 42703), (36, 42739), (44, 42811), (46, 42820), (48, 42832), (53, 42874), (61, 42904), (62, 42919), (73, 43009), (90, 43192), (98, 43315), (106, 43381), (113, 43429), (114, 43435), (128, 43561),

Gene: Satrap\_22 Start: 16854, Stop: 17816, Start Num: 15

Candidate Starts for Satrap\_22:

(5, 16782), (8, 16803), (Start: 10 @16827 has 7 MA's), (Start: 15 @16854 has 69 MA's), (16, 16863), (19, 16875), (22, 16908), (41, 17022), (46, 17064), (50, 17091), (51, 17109), (56, 17124), (104, 17619), (109, 17646), (127, 17799),

Gene: Seahorse\_23 Start: 17300, Stop: 18259, Start Num: 15

Candidate Starts for Seahorse\_23:

(Start: 15 @17300 has 69 MA's), (16, 17309), (19, 17321), (56, 17570), (58, 17579), (60, 17585), (63, 17606), (79, 17735), (104, 18062), (127, 18242),

Gene: Shen\_20 Start: 15792, Stop: 16730, Start Num: 15

Candidate Starts for Shen\_20:

(Start: 15 @15792 has 69 MA's), (24, 15858), (26, 15867), (27, 15876), (37, 15933), (38, 15936), (40, 15954), (46, 16002), (51, 16047), (54, 16056), (63, 16098), (67, 16131), (69, 16146), (74, 16191), (82, 16236), (100, 16485), (109, 16560), (115, 16605), (122, 16671), (124, 16683), (126, 16707),

Gene: Shrooms\_68 Start: 41098, Stop: 42087, Start Num: 10

Candidate Starts for Shrooms\_68:

(3, 40999), (Start: 10 @41098 has 7 MA's), (18, 41152), (20, 41170), (23, 41188), (29, 41224), (30, 41230), (35, 41254), (36, 41260), (51, 41389), (53, 41395), (61, 41425), (62, 41440), (64, 41446), (68, 41482), (71, 41503), (73, 41530), (90, 41713), (109, 41917), (114, 41956), (128, 42082),

Gene: Shukran\_22 Start: 16854, Stop: 17816, Start Num: 15

Candidate Starts for Shukran\_22:

(5, 16782), (8, 16803), (Start: 10 @16827 has 7 MA's), (Start: 15 @16854 has 69 MA's), (16, 16863), (19, 16875), (22, 16908), (41, 17022), (46, 17064), (50, 17091), (51, 17109), (56, 17124), (104, 17619), (109, 17646), (127, 17799),

Gene: SonDevVon\_21 Start: 16956, Stop: 17894, Start Num: 19

Candidate Starts for SonDevVon\_21:

(Start: 15 @16935 has 69 MA's), (16, 16944), (19, 16956), (55, 17199), (56, 17205), (58, 17214), (60, 17220), (63, 17241), (79, 17370), (94, 17610), (100, 17652), (104, 17697), (117, 17784), (127, 17877),

Gene: SpicyFrank\_22 Start: 17010, Stop: 17969, Start Num: 15

Candidate Starts for SpicyFrank\_22:

(5, 16938), (8, 16959), (Start: 10 @16983 has 7 MA's), (Start: 15 @17010 has 69 MA's), (16, 17019), (19, 17031), (33, 17124), (55, 17274), (63, 17316), (69, 17367), (79, 17445), (94, 17685), (100, 17727), (104, 17772), (108, 17793), (127, 17952),

Gene: Sporco\_23 Start: 16990, Stop: 17949, Start Num: 15

Candidate Starts for Sporco\_23:

(Start: 15 @16990 has 69 MA's), (16, 16999), (19, 17011), (55, 17254), (56, 17260), (58, 17269), (60, 17275), (63, 17296), (79, 17425), (94, 17665), (104, 17752), (117, 17839), (127, 17932),

Gene: StuartMinion\_18 Start: 14221, Stop: 15183, Start Num: 15

Candidate Starts for StuartMinion\_18:

(9, 14173), (Start: 15 @14221 has 69 MA's), (24, 14290), (28, 14314), (30, 14323), (31, 14332), (38, 14368), (40, 14386), (45, 14428), (46, 14434), (54, 14488), (61, 14515), (68, 14569), (69, 14581), (70, 14587), (84, 14692), (85, 14695), (91, 14818), (104, 14986), (106, 14998), (109, 15013), (120, 15100), (122, 15124),

Gene: TaylorSipht\_19 Start: 14602, Stop: 15540, Start Num: 15

Candidate Starts for TaylorSipht\_19:

(Start: 15 @14602 has 69 MA's), (24, 14668), (26, 14677), (30, 14701), (37, 14743), (40, 14764), (46, 14812), (74, 15001), (80, 15034), (82, 15046), (100, 15295), (122, 15481), (124, 15493), (126, 15517),

Gene: ThayneTheZag\_22 Start: 17101, Stop: 18063, Start Num: 15

Candidate Starts for ThayneTheZag\_22:

(5, 17029), (8, 17050), (Start: 10 @17074 has 7 MA's), (Start: 15 @17101 has 69 MA's), (16, 17110), (19, 17122), (22, 17155), (32, 17212), (33, 17215), (41, 17269), (46, 17311), (50, 17338), (51, 17356), (56, 17371), (63, 17407), (69, 17464), (100, 17821), (127, 18046),

Gene: Tiff81\_23 Start: 17028, Stop: 17987, Start Num: 15

Candidate Starts for Tiff81\_23:

(Start: 15 @17028 has 69 MA's), (16, 17037), (19, 17049), (55, 17292), (56, 17298), (58, 17307), (60, 17313), (63, 17334), (79, 17463), (104, 17790), (127, 17970),

Gene: Toad24\_20 Start: 15792, Stop: 16730, Start Num: 15

Candidate Starts for Toad24\_20:

(Start: 15 @15792 has 69 MA's), (24, 15858), (26, 15867), (27, 15876), (37, 15933), (38, 15936), (40, 15954), (46, 16002), (51, 16047), (54, 16056), (63, 16098), (67, 16131), (69, 16146), (74, 16191), (82, 16236), (100, 16485), (109, 16560), (115, 16605), (122, 16671), (124, 16683), (126, 16707),

Gene: Vopal\_23 Start: 17005, Stop: 17964, Start Num: 15

Candidate Starts for Vopal\_23:

(Start: 15 @17005 has 69 MA's), (16, 17014), (55, 17269), (56, 17275), (58, 17284), (60, 17290), (63, 17311), (79, 17440), (94, 17680), (104, 17767), (117, 17854), (127, 17947),

Gene: Vulpecula\_19 Start: 15323, Stop: 16267, Start Num: 14

Candidate Starts for Vulpecula\_19:

(Start: 14 @15323 has 2 MA's), (Start: 15 @15326 has 69 MA's), (18, 15344), (24, 15392), (28, 15416), (30, 15425), (37, 15467), (39, 15485), (40, 15488), (46, 15536), (58, 15608), (69, 15680), (83, 15779), (109, 16097), (115, 16142), (122, 16208),

Gene: Waltz\_67 Start: 41111, Stop: 42100, Start Num: 10

Candidate Starts for Waltz\_67:

(3, 41012), (Start: 10 @41111 has 7 MA's), (18, 41165), (20, 41183), (21, 41189), (23, 41201), (29, 41237), (34, 41264), (35, 41267), (36, 41273), (51, 41402), (53, 41408), (61, 41438), (62, 41453), (68, 41495), (71, 41516), (73, 41543), (90, 41726), (114, 41969), (128, 42095),

Gene: Westrich\_20 Start: 15781, Stop: 16719, Start Num: 15

Candidate Starts for Westrich\_20:

(Start: 15 @15781 has 69 MA's), (24, 15847), (26, 15856), (27, 15865), (37, 15922), (38, 15925), (40, 15943), (46, 15991), (51, 16036), (52, 16039), (54, 16045), (67, 16120), (69, 16135), (70, 16141), (74, 16180), (82, 16225), (100, 16474), (109, 16549), (115, 16594), (122, 16660), (124, 16672), (126, 16696),

Gene: Wheelbite\_66 Start: 42734, Stop: 43717, Start Num: 10

Candidate Starts for Wheelbite\_66:

(Start: 10 @42734 has 7 MA's), (29, 42854), (30, 42860), (36, 42890), (42, 42932), (44, 42962), (46, 42971), (51, 43019), (53, 43025), (62, 43070), (68, 43112), (73, 43160), (85, 43235), (98, 43466), (106, 43532), (113, 43580), (114, 43586), (128, 43712),

Gene: WileyE\_18 Start: 14660, Stop: 15601, Start Num: 15

Candidate Starts for WileyE\_18:

(Start: 14 @14657 has 2 MA's), (Start: 15 @14660 has 69 MA's), (18, 14678), (24, 14726), (28, 14750), (30, 14759), (37, 14801), (39, 14819), (40, 14822), (46, 14870), (58, 14942), (69, 15014), (83, 15113), (109, 15431), (115, 15476), (122, 15542),

Gene: Windest\_23 Start: 16989, Stop: 17948, Start Num: 15

Candidate Starts for Windest\_23:

(Start: 15 @16989 has 69 MA's), (16, 16998), (19, 17010), (55, 17253), (56, 17259), (58, 17268), (60, 17274), (63, 17295), (79, 17424), (94, 17664), (100, 17706), (104, 17751), (111, 17784), (117, 17838), (127, 17931),

Gene: YoungHarleezy\_22 Start: 16946, Stop: 17905, Start Num: 15

Candidate Starts for YoungHarleezy\_22:

(Start: 15 @16946 has 69 MA's), (16, 16955), (55, 17210), (56, 17216), (58, 17225), (60, 17231), (63, 17252), (79, 17381), (94, 17621), (100, 17663), (104, 17708), (117, 17795), (127, 17888),

Gene: Zhuangyuan\_21 Start: 15026, Stop: 15979, Start Num: 15

Candidate Starts for Zhuangyuan\_21:

(7, 14969), (Start: 15 @15026 has 69 MA's), (24, 15095), (25, 15098), (29, 15122), (30, 15128), (37, 15170), (38, 15173), (39, 15188), (40, 15191), (46, 15239), (54, 15293), (69, 15383), (79, 15461), (91, 15617), (93, 15680), (104, 15782), (107, 15800), (115, 15854), (122, 15920), (125, 15941), (127, 15962),

Gene: Zixiang\_19 Start: 15672, Stop: 16610, Start Num: 15

Candidate Starts for Zixiang\_19:

(Start: 15 @15672 has 69 MA's), (24, 15738), (26, 15747), (27, 15756), (37, 15813), (38, 15816), (40, 15834), (46, 15882), (54, 15936), (67, 16011), (69, 16026), (70, 16032), (74, 16071), (82, 16116), (100, 16365), (109, 16440), (115, 16485), (122, 16551), (124, 16563),