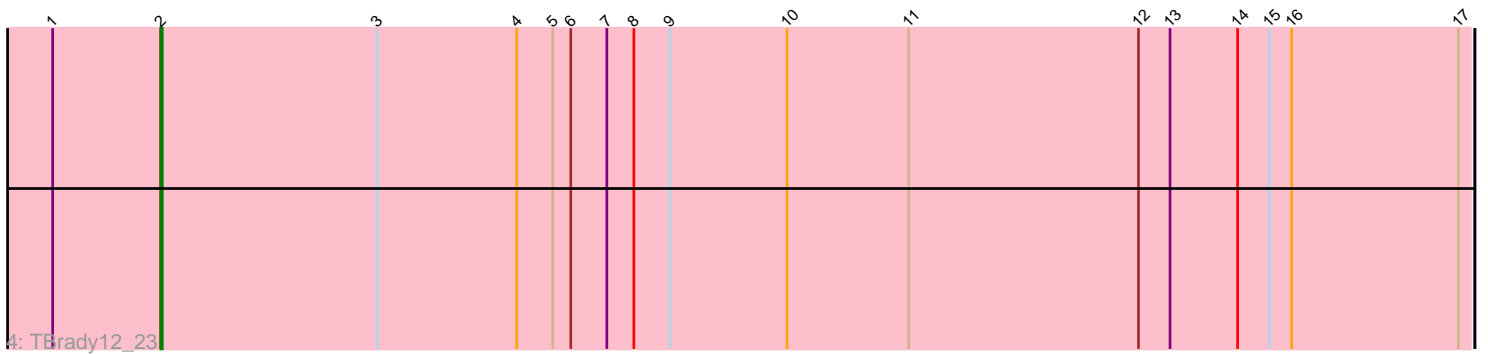
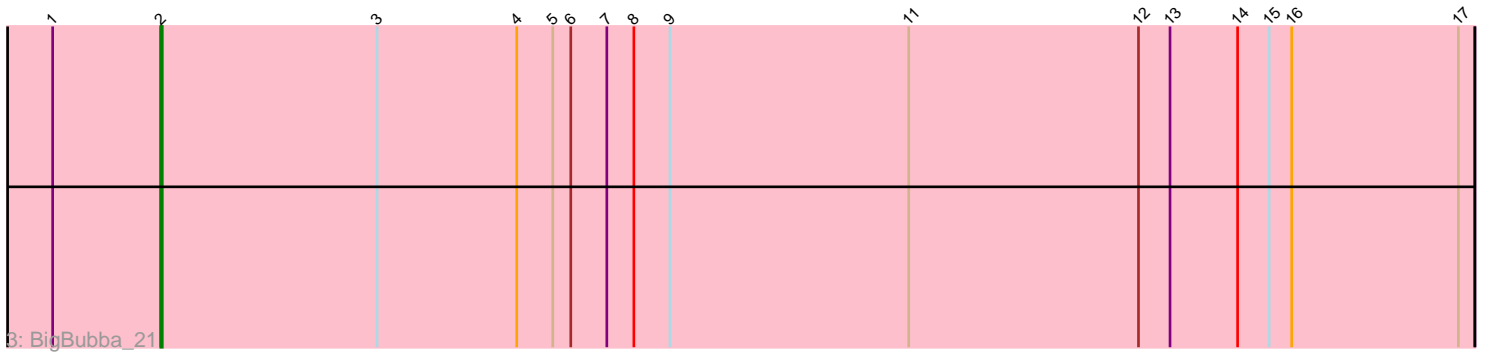
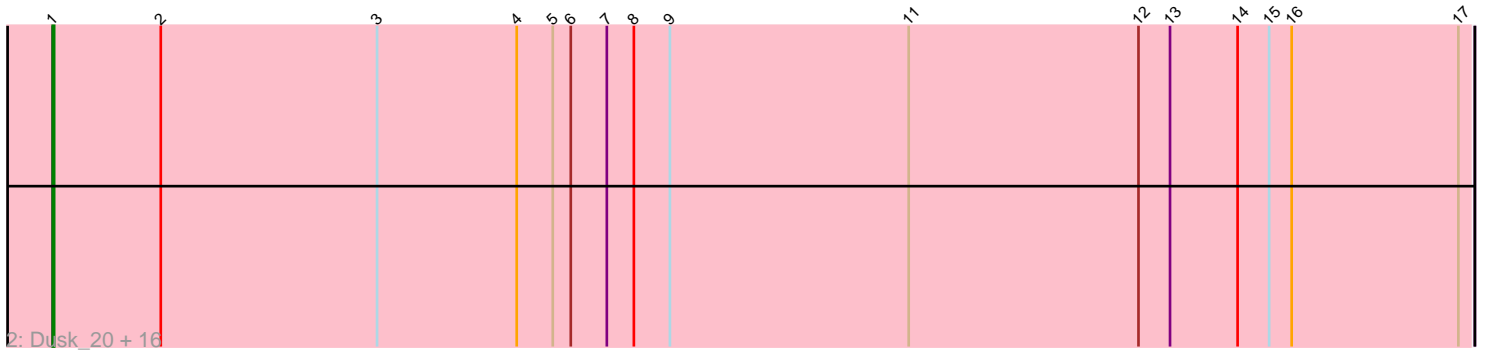
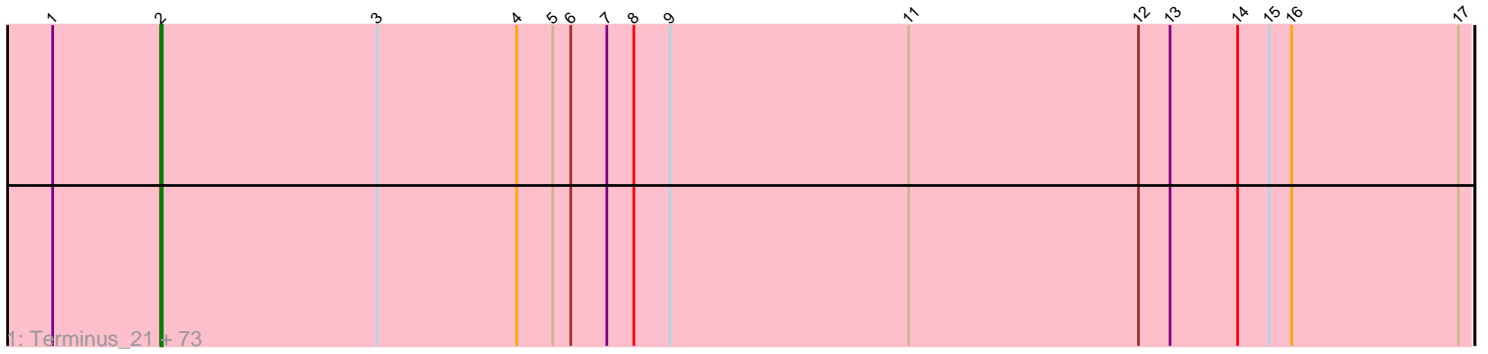


# Pham 196443



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 196443 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196443 has 93 members, 0 are drafts.

Phages represented in each track:

- Track 1 : Terminus\_21, Goldilocks\_22, Balomoji\_20, BadStone\_20, Gage\_23, Inca\_20, Command613\_22, ChosenOne\_20, HanKaySha\_22, DoctorDiddles\_21, Henry\_20, Gemini\_23, ChotaBhai\_21, JeTaime\_23, Filch\_22, Moldemort\_22, Emmina\_21, Paperbeatsrock\_23, Simpliphy\_22, Highbury\_22, Saints25\_22, Kimchi\_23, Harella\_19, Stank\_23, ShereKhan\_23, Lilpickle\_20, FireRed\_20, Argent26\_23, Xandras\_23, Wiggin\_23, Willez\_20, MISSy\_20, Barbarian\_20, Easy2Say\_22, ShamWow\_21, YassJohnny\_21, StolenFromERC\_23, Tuco\_21, Quallification\_22, Holt\_22, Rimmer\_20, Sotrice96\_21, MadamMonkfish\_21, NelitzaMV\_21, NoSleep\_22, xkcd\_21, Youngblood\_21, Hoonter\_23, Tomaszewski\_20, Adnama\_23, TeardropMSU\_20, GoldenSpark\_23, Murica\_19, OrionPax\_22, Marshmallow\_21, Traaww1\_18, AmericanBeauty\_23, Flypotenuse\_19, Buck\_20, Sassay\_20, Elite2014\_20, Bench\_23, Cactus\_22, Stark\_22, Miniwave\_21, Asriel\_20, GooberAzure\_23, Thresher\_22, Tarkin\_23, Lilizi\_23, MPhalcon\_20, Misfit\_21, Cookies\_21, Icee\_20
- Track 2 : Dusk\_20, Pharsalus\_22, Phaja\_20, Maxxinista\_22, Gator\_19, Myrale\_21, ABCat\_20, Nimrod\_21, StellaBean\_21, Czyszczon1\_22, Kanye\_23, IHOP\_20, SophKB\_21, Teaspoon\_21, CrystalP\_21, Glexan\_19, Hopey\_22
- Track 3 : BigBubba\_21
- Track 4 : TBrady12\_23

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

The start number called the most often in the published annotations is 2, it was called in 76 of the 93 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adnama\_23, AmericanBeauty\_23, Argent26\_23, Asriel\_20, BadStone\_20, Balomoji\_20, Barbarian\_20, Bench\_23, BigBubba\_21, Buck\_20, Cactus\_22, ChosenOne\_20, ChotaBhai\_21, Command613\_22, Cookies\_21, DoctorDiddles\_21, Easy2Say\_22, Elite2014\_20, Emmina\_21, Filch\_22, FireRed\_20, Flypotenuse\_19, Gage\_23, Gemini\_23, GoldenSpark\_23, Goldilocks\_22, GooberAzure\_23, HanKaySha\_22, Harella\_19, Henry\_20, Highbury\_22, Holt\_22, Hoonter\_23, Icee\_20, Inca\_20, JeTaime\_23, Kimchi\_23, Lilizi\_23, Lilpickle\_20, MISSy\_20, MPhalcon\_20, MadamMonkfish\_21, Marshmallow\_21, Miniwave\_21, Misfit\_21, Moldemort\_22,

Murica\_19, NelitzaMV\_21, NoSleep\_22, OrionPax\_22, Paperbeatsrock\_23, Quallification\_22, Rimmer\_20, Saints25\_22, Sassay\_20, ShamWow\_21, ShereKhan\_23, Simpliphy\_22, Sotrice96\_21, Stank\_23, Stark\_22, StolenFromERC\_23, TBrady12\_23, Tarkin\_23, TeardropMSU\_20, Terminus\_21, Thresher\_22, Tomaszewski\_20, Traaww1\_18, Tuco\_21, Wiggin\_23, Willez\_20, Xandras\_23, YassJohnny\_21, Youngblood\_21, xkcd\_21,

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

- ABCat\_20, CrystalP\_21, Czyszczone1\_22, Dusk\_20, Gator\_19, Glexan\_19, Hopey\_22, IHOP\_20, Kanye\_23, Maxxinista\_22, Myrale\_21, Nimrod\_21, Phaja\_20, Pharsalus\_22, SophKB\_21, StellaBean\_21, Teaspoon\_21,

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

- 

### Summary by start number:

Start 1:

- Found in 93 of 93 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 17 of 93
- Called 18.3% of time when present
- Phage (with cluster) where this start called: ABCat\_20 (E), CrystalP\_21 (E), Czyszczone1\_22 (E), Dusk\_20 (E), Gator\_19 (E), Glexan\_19 (E), Hopey\_22 (E), IHOP\_20 (E), Kanye\_23 (E), Maxxinista\_22 (E), Myrale\_21 (E), Nimrod\_21 (E), Phaja\_20 (E), Pharsalus\_22 (E), SophKB\_21 (E), StellaBean\_21 (E), Teaspoon\_21 (E),

Start 2:

- Found in 93 of 93 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 76 of 93
- Called 81.7% of time when present
- Phage (with cluster) where this start called: Adnama\_23 (E), AmericanBeauty\_23 (E), Argent26\_23 (E), Asriel\_20 (E), BadStone\_20 (E), Balomoji\_20 (E), Barbarian\_20 (E), Bench\_23 (E), BigBubba\_21 (E), Buck\_20 (E), Cactus\_22 (E), ChosenOne\_20 (E), ChotaBhai\_21 (E), Command613\_22 (E), Cookies\_21 (E), DoctorDiddles\_21 (E), Easy2Say\_22 (E), Elite2014\_20 (E), Emmina\_21 (E), Filch\_22 (E), FireRed\_20 (E), Flypotenuse\_19 (E), Gage\_23 (E), Gemini\_23 (E), GoldenSpark\_23 (E), Goldilocks\_22 (E), GooberAzure\_23 (E), HanKaySha\_22 (E), Harella\_19 (E), Henry\_20 (E), Highbury\_22 (E), Holt\_22 (E), Hoonter\_23 (E), Icee\_20 (E), Inca\_20 (E), JeTaime\_23 (E), Kimchi\_23 (E), Lilizi\_23 (E), Lilipickle\_20 (E), MISSy\_20 (E), MPhalcon\_20 (E), MadamMonkfish\_21 (E), Marshmallow\_21 (E), Miniwave\_21 (E), Misfit\_21 (E), Moldemort\_22 (E), Murica\_19 (E), NelitzaMV\_21 (E), NoSleep\_22 (E), OrionPax\_22 (E), Paperbeatsrock\_23 (E), Quallification\_22 (E), Rimmer\_20 (E), Saints25\_22 (E), Sassay\_20 (E), ShamWow\_21 (E), ShereKhan\_23 (E), Simpliphy\_22 (E), Sotrice96\_21 (E), Stank\_23 (E), Stark\_22 (E), StolenFromERC\_23 (E), TBrady12\_23 (E), Tarkin\_23 (E), TeardropMSU\_20 (E), Terminus\_21 (E), Thresher\_22 (E), Tomaszewski\_20 (E), Traaww1\_18 (E), Tuco\_21 (E), Wiggin\_23 (E), Willez\_20 (E), Xandras\_23 (E), YassJohnny\_21 (E), Youngblood\_21 (E), xkcd\_21 (E),

### Summary by clusters:

There is one cluster represented in this pham: E

Info for manual annotations of cluster E:

- Start number 1 was manually annotated 17 times for cluster E.
- Start number 2 was manually annotated 76 times for cluster E.

### **Gene Information:**

Gene: ABCat\_20 Start: 12397, Stop: 13340, Start Num: 1

Candidate Starts for ABCat\_20:

(Start: 1 @12397 has 17 MA's), (Start: 2 @12469 has 76 MA's), (3, 12613), (4, 12706), (5, 12730), (6, 12742), (7, 12766), (8, 12784), (9, 12808), (11, 12967), (12, 13120), (13, 13141), (14, 13186), (15, 13207), (16, 13222), (17, 13333),

Gene: Adnama\_23 Start: 12463, Stop: 13337, Start Num: 2

Candidate Starts for Adnama\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: AmericanBeauty\_23 Start: 12460, Stop: 13331, Start Num: 2

Candidate Starts for AmericanBeauty\_23:

(Start: 1 @12388 has 17 MA's), (Start: 2 @12460 has 76 MA's), (3, 12604), (4, 12697), (5, 12721), (6, 12733), (7, 12757), (8, 12775), (9, 12799), (11, 12958), (12, 13111), (13, 13132), (14, 13177), (15, 13198), (16, 13213), (17, 13324),

Gene: Argent26\_23 Start: 12463, Stop: 13334, Start Num: 2

Candidate Starts for Argent26\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: Asriel\_20 Start: 11341, Stop: 12212, Start Num: 2

Candidate Starts for Asriel\_20:

(Start: 1 @11269 has 17 MA's), (Start: 2 @11341 has 76 MA's), (3, 11485), (4, 11578), (5, 11602), (6, 11614), (7, 11638), (8, 11656), (9, 11680), (11, 11839), (12, 11992), (13, 12013), (14, 12058), (15, 12079), (16, 12094), (17, 12205),

Gene: BadStone\_20 Start: 12469, Stop: 13340, Start Num: 2

Candidate Starts for BadStone\_20:

(Start: 1 @12397 has 17 MA's), (Start: 2 @12469 has 76 MA's), (3, 12613), (4, 12706), (5, 12730), (6, 12742), (7, 12766), (8, 12784), (9, 12808), (11, 12967), (12, 13120), (13, 13141), (14, 13186), (15, 13207), (16, 13222), (17, 13333),

Gene: Balomoji\_20 Start: 12203, Stop: 13074, Start Num: 2

Candidate Starts for Balomoji\_20:

(Start: 1 @12131 has 17 MA's), (Start: 2 @12203 has 76 MA's), (3, 12347), (4, 12440), (5, 12464), (6, 12476), (7, 12500), (8, 12518), (9, 12542), (11, 12701), (12, 12854), (13, 12875), (14, 12920), (15, 12941), (16, 12956), (17, 13067),

Gene: Barbarian\_20 Start: 11341, Stop: 12212, Start Num: 2

Candidate Starts for Barbarian\_20:

(Start: 1 @11269 has 17 MA's), (Start: 2 @11341 has 76 MA's), (3, 11485), (4, 11578), (5, 11602), (6, 11614), (7, 11638), (8, 11656), (9, 11680), (11, 11839), (12, 11992), (13, 12013), (14, 12058), (15, 12079), (16, 12094), (17, 12205),

Gene: Bench\_23 Start: 12336, Stop: 13207, Start Num: 2

Candidate Starts for Bench\_23:

(Start: 1 @12264 has 17 MA's), (Start: 2 @12336 has 76 MA's), (3, 12480), (4, 12573), (5, 12597), (6, 12609), (7, 12633), (8, 12651), (9, 12675), (11, 12834), (12, 12987), (13, 13008), (14, 13053), (15, 13074), (16, 13089), (17, 13200),

Gene: BigBubba\_21 Start: 11720, Stop: 12594, Start Num: 2

Candidate Starts for BigBubba\_21:

(Start: 1 @11648 has 17 MA's), (Start: 2 @11720 has 76 MA's), (3, 11864), (4, 11957), (5, 11981), (6, 11993), (7, 12017), (8, 12035), (9, 12059), (11, 12218), (12, 12371), (13, 12392), (14, 12437), (15, 12458), (16, 12473), (17, 12584),

Gene: Buck\_20 Start: 12426, Stop: 13297, Start Num: 2

Candidate Starts for Buck\_20:

(Start: 1 @12354 has 17 MA's), (Start: 2 @12426 has 76 MA's), (3, 12570), (4, 12663), (5, 12687), (6, 12699), (7, 12723), (8, 12741), (9, 12765), (11, 12924), (12, 13077), (13, 13098), (14, 13143), (15, 13164), (16, 13179), (17, 13290),

Gene: Cactus\_22 Start: 11682, Stop: 12553, Start Num: 2

Candidate Starts for Cactus\_22:

(Start: 1 @11610 has 17 MA's), (Start: 2 @11682 has 76 MA's), (3, 11826), (4, 11919), (5, 11943), (6, 11955), (7, 11979), (8, 11997), (9, 12021), (11, 12180), (12, 12333), (13, 12354), (14, 12399), (15, 12420), (16, 12435), (17, 12546),

Gene: ChosenOne\_20 Start: 11683, Stop: 12554, Start Num: 2

Candidate Starts for ChosenOne\_20:

(Start: 1 @11611 has 17 MA's), (Start: 2 @11683 has 76 MA's), (3, 11827), (4, 11920), (5, 11944), (6, 11956), (7, 11980), (8, 11998), (9, 12022), (11, 12181), (12, 12334), (13, 12355), (14, 12400), (15, 12421), (16, 12436), (17, 12547),

Gene: ChotaBhai\_21 Start: 11719, Stop: 12590, Start Num: 2

Candidate Starts for ChotaBhai\_21:

(Start: 1 @11647 has 17 MA's), (Start: 2 @11719 has 76 MA's), (3, 11863), (4, 11956), (5, 11980), (6, 11992), (7, 12016), (8, 12034), (9, 12058), (11, 12217), (12, 12370), (13, 12391), (14, 12436), (15, 12457), (16, 12472), (17, 12583),

Gene: Command613\_22 Start: 12738, Stop: 13609, Start Num: 2

Candidate Starts for Command613\_22:

(Start: 1 @12666 has 17 MA's), (Start: 2 @12738 has 76 MA's), (3, 12882), (4, 12975), (5, 12999), (6, 13011), (7, 13035), (8, 13053), (9, 13077), (11, 13236), (12, 13389), (13, 13410), (14, 13455), (15, 13476), (16, 13491), (17, 13602),

Gene: Cookies\_21 Start: 12342, Stop: 13213, Start Num: 2

Candidate Starts for Cookies\_21:

(Start: 1 @12270 has 17 MA's), (Start: 2 @12342 has 76 MA's), (3, 12486), (4, 12579), (5, 12603), (6, 12615), (7, 12639), (8, 12657), (9, 12681), (11, 12840), (12, 12993), (13, 13014), (14, 13059), (15, 13080), (16, 13095), (17, 13206),

Gene: CrystalP\_21 Start: 12398, Stop: 13341, Start Num: 1

Candidate Starts for CrystalP\_21:

(Start: 1 @12398 has 17 MA's), (Start: 2 @12470 has 76 MA's), (3, 12614), (4, 12707), (5, 12731), (6, 12743), (7, 12767), (8, 12785), (9, 12809), (11, 12968), (12, 13121), (13, 13142), (14, 13187), (15, 13208), (16, 13223), (17, 13334),

Gene: Czyszczone1\_22 Start: 12146, Stop: 13089, Start Num: 1

Candidate Starts for Czyszczone1\_22:

(Start: 1 @12146 has 17 MA's), (Start: 2 @12218 has 76 MA's), (3, 12362), (4, 12455), (5, 12479), (6, 12491), (7, 12515), (8, 12533), (9, 12557), (11, 12716), (12, 12869), (13, 12890), (14, 12935), (15, 12956), (16, 12971), (17, 13082),

Gene: DoctorDiddles\_21 Start: 11635, Stop: 12506, Start Num: 2

Candidate Starts for DoctorDiddles\_21:

(Start: 1 @11563 has 17 MA's), (Start: 2 @11635 has 76 MA's), (3, 11779), (4, 11872), (5, 11896), (6, 11908), (7, 11932), (8, 11950), (9, 11974), (11, 12133), (12, 12286), (13, 12307), (14, 12352), (15, 12373), (16, 12388), (17, 12499),

Gene: Dusk\_20 Start: 12057, Stop: 13000, Start Num: 1

Candidate Starts for Dusk\_20:

(Start: 1 @12057 has 17 MA's), (Start: 2 @12129 has 76 MA's), (3, 12273), (4, 12366), (5, 12390), (6, 12402), (7, 12426), (8, 12444), (9, 12468), (11, 12627), (12, 12780), (13, 12801), (14, 12846), (15, 12867), (16, 12882), (17, 12993),

Gene: Easy2Say\_22 Start: 13206, Stop: 14080, Start Num: 2

Candidate Starts for Easy2Say\_22:

(Start: 1 @13134 has 17 MA's), (Start: 2 @13206 has 76 MA's), (3, 13350), (4, 13443), (5, 13467), (6, 13479), (7, 13503), (8, 13521), (9, 13545), (11, 13704), (12, 13857), (13, 13878), (14, 13923), (15, 13944), (16, 13959), (17, 14070),

Gene: Elite2014\_20 Start: 11683, Stop: 12554, Start Num: 2

Candidate Starts for Elite2014\_20:

(Start: 1 @11611 has 17 MA's), (Start: 2 @11683 has 76 MA's), (3, 11827), (4, 11920), (5, 11944), (6, 11956), (7, 11980), (8, 11998), (9, 12022), (11, 12181), (12, 12334), (13, 12355), (14, 12400), (15, 12421), (16, 12436), (17, 12547),

Gene: Emmina\_21 Start: 11788, Stop: 12662, Start Num: 2

Candidate Starts for Emmina\_21:

(Start: 1 @11716 has 17 MA's), (Start: 2 @11788 has 76 MA's), (3, 11932), (4, 12025), (5, 12049), (6, 12061), (7, 12085), (8, 12103), (9, 12127), (11, 12286), (12, 12439), (13, 12460), (14, 12505), (15, 12526), (16, 12541), (17, 12652),

Gene: Filch\_22 Start: 12228, Stop: 13099, Start Num: 2

Candidate Starts for Filch\_22:

(Start: 1 @12156 has 17 MA's), (Start: 2 @12228 has 76 MA's), (3, 12372), (4, 12465), (5, 12489), (6, 12501), (7, 12525), (8, 12543), (9, 12567), (11, 12726), (12, 12879), (13, 12900), (14, 12945), (15, 12966), (16, 12981), (17, 13092),

Gene: FireRed\_20 Start: 11979, Stop: 12853, Start Num: 2

Candidate Starts for FireRed\_20:

(Start: 1 @11907 has 17 MA's), (Start: 2 @11979 has 76 MA's), (3, 12123), (4, 12216), (5, 12240), (6, 12252), (7, 12276), (8, 12294), (9, 12318), (11, 12477), (12, 12630), (13, 12651), (14, 12696), (15, 12717), (16, 12732), (17, 12843),

Gene: Flypotenuse\_19 Start: 12086, Stop: 12957, Start Num: 2

Candidate Starts for Flypotenuse\_19:

(Start: 1 @12014 has 17 MA's), (Start: 2 @12086 has 76 MA's), (3, 12230), (4, 12323), (5, 12347), (6, 12359), (7, 12383), (8, 12401), (9, 12425), (11, 12584), (12, 12737), (13, 12758), (14, 12803), (15, 12824), (16, 12839), (17, 12950),

Gene: Gage\_23 Start: 12463, Stop: 13334, Start Num: 2

Candidate Starts for Gage\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: Gator\_19 Start: 12013, Stop: 12956, Start Num: 1

Candidate Starts for Gator\_19:

(Start: 1 @12013 has 17 MA's), (Start: 2 @12085 has 76 MA's), (3, 12229), (4, 12322), (5, 12346), (6, 12358), (7, 12382), (8, 12400), (9, 12424), (11, 12583), (12, 12736), (13, 12757), (14, 12802), (15, 12823), (16, 12838), (17, 12949),

Gene: Gemini\_23 Start: 12463, Stop: 13337, Start Num: 2

Candidate Starts for Gemini\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: Glexan\_19 Start: 12014, Stop: 12957, Start Num: 1

Candidate Starts for Glexan\_19:

(Start: 1 @12014 has 17 MA's), (Start: 2 @12086 has 76 MA's), (3, 12230), (4, 12323), (5, 12347), (6, 12359), (7, 12383), (8, 12401), (9, 12425), (11, 12584), (12, 12737), (13, 12758), (14, 12803), (15, 12824), (16, 12839), (17, 12950),

Gene: GoldenSpark\_23 Start: 12463, Stop: 13334, Start Num: 2

Candidate Starts for GoldenSpark\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: Goldilocks\_22 Start: 11880, Stop: 12751, Start Num: 2

Candidate Starts for Goldilocks\_22:

(Start: 1 @11808 has 17 MA's), (Start: 2 @11880 has 76 MA's), (3, 12024), (4, 12117), (5, 12141), (6, 12153), (7, 12177), (8, 12195), (9, 12219), (11, 12378), (12, 12531), (13, 12552), (14, 12597), (15, 12618), (16, 12633), (17, 12744),

Gene: GooberAzure\_23 Start: 12463, Stop: 13334, Start Num: 2

Candidate Starts for GooberAzure\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: HanKaySha\_22 Start: 12218, Stop: 13089, Start Num: 2

Candidate Starts for HanKaySha\_22:

(Start: 1 @12146 has 17 MA's), (Start: 2 @12218 has 76 MA's), (3, 12362), (4, 12455), (5, 12479), (6, 12491), (7, 12515), (8, 12533), (9, 12557), (11, 12716), (12, 12869), (13, 12890), (14, 12935), (15, 12956), (16, 12971), (17, 13082),

Gene: Harella\_19 Start: 12086, Stop: 12960, Start Num: 2

Candidate Starts for Harella\_19:

(Start: 1 @12014 has 17 MA's), (Start: 2 @12086 has 76 MA's), (3, 12230), (4, 12323), (5, 12347), (6, 12359), (7, 12383), (8, 12401), (9, 12425), (11, 12584), (12, 12737), (13, 12758), (14, 12803), (15, 12824), (16, 12839), (17, 12950),

Gene: Henry\_20 Start: 12469, Stop: 13340, Start Num: 2

Candidate Starts for Henry\_20:

(Start: 1 @12397 has 17 MA's), (Start: 2 @12469 has 76 MA's), (3, 12613), (4, 12706), (5, 12730), (6, 12742), (7, 12766), (8, 12784), (9, 12808), (11, 12967), (12, 13120), (13, 13141), (14, 13186), (15, 13207), (16, 13222), (17, 13333),

Gene: Highbury\_22 Start: 12137, Stop: 13008, Start Num: 2

Candidate Starts for Highbury\_22:

(Start: 1 @12065 has 17 MA's), (Start: 2 @12137 has 76 MA's), (3, 12281), (4, 12374), (5, 12398), (6, 12410), (7, 12434), (8, 12452), (9, 12476), (11, 12635), (12, 12788), (13, 12809), (14, 12854), (15, 12875), (16, 12890), (17, 13001),

Gene: Holt\_22 Start: 11753, Stop: 12624, Start Num: 2

Candidate Starts for Holt\_22:

(Start: 1 @11681 has 17 MA's), (Start: 2 @11753 has 76 MA's), (3, 11897), (4, 11990), (5, 12014), (6, 12026), (7, 12050), (8, 12068), (9, 12092), (11, 12251), (12, 12404), (13, 12425), (14, 12470), (15, 12491), (16, 12506), (17, 12617),

Gene: Hoonter\_23 Start: 12463, Stop: 13334, Start Num: 2

Candidate Starts for Hoonter\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: Hokey\_22 Start: 12156, Stop: 13102, Start Num: 1

Candidate Starts for Hokey\_22:

(Start: 1 @12156 has 17 MA's), (Start: 2 @12228 has 76 MA's), (3, 12372), (4, 12465), (5, 12489), (6, 12501), (7, 12525), (8, 12543), (9, 12567), (11, 12726), (12, 12879), (13, 12900), (14, 12945), (15, 12966), (16, 12981), (17, 13092),

Gene: IHOP\_20 Start: 12057, Stop: 13003, Start Num: 1

Candidate Starts for IHOP\_20:

(Start: 1 @12057 has 17 MA's), (Start: 2 @12129 has 76 MA's), (3, 12273), (4, 12366), (5, 12390), (6, 12402), (7, 12426), (8, 12444), (9, 12468), (11, 12627), (12, 12780), (13, 12801), (14, 12846), (15, 12867), (16, 12882), (17, 12993),

Gene: Icee\_20 Start: 12129, Stop: 13000, Start Num: 2

Candidate Starts for Icee\_20:

(Start: 1 @12057 has 17 MA's), (Start: 2 @12129 has 76 MA's), (3, 12273), (4, 12366), (5, 12390), (6, 12402), (7, 12426), (8, 12444), (9, 12468), (11, 12627), (12, 12780), (13, 12801), (14, 12846), (15, 12867), (16, 12882), (17, 12993),

Gene: Inca\_20 Start: 11149, Stop: 12020, Start Num: 2

Candidate Starts for Inca\_20:

(Start: 1 @11077 has 17 MA's), (Start: 2 @11149 has 76 MA's), (3, 11293), (4, 11386), (5, 11410), (6, 11422), (7, 11446), (8, 11464), (9, 11488), (11, 11647), (12, 11800), (13, 11821), (14, 11866), (15,



11887), (16, 11902), (17, 12013),

Gene: JeTaime\_23 Start: 13268, Stop: 14139, Start Num: 2

Candidate Starts for JeTaime\_23:

(Start: 1 @13196 has 17 MA's), (Start: 2 @13268 has 76 MA's), (3, 13412), (4, 13505), (5, 13529), (6, 13541), (7, 13565), (8, 13583), (9, 13607), (11, 13766), (12, 13919), (13, 13940), (14, 13985), (15, 14006), (16, 14021), (17, 14132),

Gene: Kanye\_23 Start: 13384, Stop: 14327, Start Num: 1

Candidate Starts for Kanye\_23:

(Start: 1 @13384 has 17 MA's), (Start: 2 @13456 has 76 MA's), (3, 13600), (4, 13693), (5, 13717), (6, 13729), (7, 13753), (8, 13771), (9, 13795), (11, 13954), (12, 14107), (13, 14128), (14, 14173), (15, 14194), (16, 14209), (17, 14320),

Gene: Kimchi\_23 Start: 12463, Stop: 13334, Start Num: 2

Candidate Starts for Kimchi\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: Lilizi\_23 Start: 12175, Stop: 13046, Start Num: 2

Candidate Starts for Lilizi\_23:

(Start: 1 @12103 has 17 MA's), (Start: 2 @12175 has 76 MA's), (3, 12319), (4, 12412), (5, 12436), (6, 12448), (7, 12472), (8, 12490), (9, 12514), (11, 12673), (12, 12826), (13, 12847), (14, 12892), (15, 12913), (16, 12928), (17, 13039),

Gene: Lilpickle\_20 Start: 11683, Stop: 12554, Start Num: 2

Candidate Starts for Lilpickle\_20:

(Start: 1 @11611 has 17 MA's), (Start: 2 @11683 has 76 MA's), (3, 11827), (4, 11920), (5, 11944), (6, 11956), (7, 11980), (8, 11998), (9, 12022), (11, 12181), (12, 12334), (13, 12355), (14, 12400), (15, 12421), (16, 12436), (17, 12547),

Gene: MISSy\_20 Start: 11979, Stop: 12850, Start Num: 2

Candidate Starts for MISSy\_20:

(Start: 1 @11907 has 17 MA's), (Start: 2 @11979 has 76 MA's), (3, 12123), (4, 12216), (5, 12240), (6, 12252), (7, 12276), (8, 12294), (9, 12318), (11, 12477), (12, 12630), (13, 12651), (14, 12696), (15, 12717), (16, 12732), (17, 12843),

Gene: MPhalcon\_20 Start: 11979, Stop: 12850, Start Num: 2

Candidate Starts for MPhalcon\_20:

(Start: 1 @11907 has 17 MA's), (Start: 2 @11979 has 76 MA's), (3, 12123), (4, 12216), (5, 12240), (6, 12252), (7, 12276), (8, 12294), (9, 12318), (11, 12477), (12, 12630), (13, 12651), (14, 12696), (15, 12717), (16, 12732), (17, 12843),

Gene: MadamMonkfish\_21 Start: 11894, Stop: 12765, Start Num: 2

Candidate Starts for MadamMonkfish\_21:

(Start: 1 @11822 has 17 MA's), (Start: 2 @11894 has 76 MA's), (3, 12038), (4, 12131), (5, 12155), (6, 12167), (7, 12191), (8, 12209), (9, 12233), (11, 12392), (12, 12545), (13, 12566), (14, 12611), (15, 12632), (16, 12647), (17, 12758),

Gene: Marshmallow\_21 Start: 12469, Stop: 13340, Start Num: 2

Candidate Starts for Marshmallow\_21:

(Start: 1 @12397 has 17 MA's), (Start: 2 @12469 has 76 MA's), (3, 12613), (4, 12706), (5, 12730), (6, 12742), (7, 12766), (8, 12784), (9, 12808), (11, 12967), (12, 13120), (13, 13141), (14, 13186), (15, 13207), (16, 13222), (17, 13333),

Gene: Maxxinista\_22 Start: 11871, Stop: 12814, Start Num: 1

Candidate Starts for Maxxinista\_22:

(Start: 1 @11871 has 17 MA's), (Start: 2 @11943 has 76 MA's), (3, 12087), (4, 12180), (5, 12204), (6, 12216), (7, 12240), (8, 12258), (9, 12282), (11, 12441), (12, 12594), (13, 12615), (14, 12660), (15, 12681), (16, 12696), (17, 12807),

Gene: Miniwave\_21 Start: 12667, Stop: 13538, Start Num: 2

Candidate Starts for Miniwave\_21:

(Start: 1 @12595 has 17 MA's), (Start: 2 @12667 has 76 MA's), (3, 12811), (4, 12904), (5, 12928), (6, 12940), (7, 12964), (8, 12982), (9, 13006), (11, 13165), (12, 13318), (13, 13339), (14, 13384), (15, 13405), (16, 13420), (17, 13531),

Gene: Misfit\_21 Start: 12560, Stop: 13431, Start Num: 2

Candidate Starts for Misfit\_21:

(Start: 1 @12488 has 17 MA's), (Start: 2 @12560 has 76 MA's), (3, 12704), (4, 12797), (5, 12821), (6, 12833), (7, 12857), (8, 12875), (9, 12899), (11, 13058), (12, 13211), (13, 13232), (14, 13277), (15, 13298), (16, 13313), (17, 13424),

Gene: Moldemort\_22 Start: 12218, Stop: 13089, Start Num: 2

Candidate Starts for Moldemort\_22:

(Start: 1 @12146 has 17 MA's), (Start: 2 @12218 has 76 MA's), (3, 12362), (4, 12455), (5, 12479), (6, 12491), (7, 12515), (8, 12533), (9, 12557), (11, 12716), (12, 12869), (13, 12890), (14, 12935), (15, 12956), (16, 12971), (17, 13082),

Gene: Murica\_19 Start: 11935, Stop: 12809, Start Num: 2

Candidate Starts for Murica\_19:

(Start: 1 @11863 has 17 MA's), (Start: 2 @11935 has 76 MA's), (3, 12079), (4, 12172), (5, 12196), (6, 12208), (7, 12232), (8, 12250), (9, 12274), (11, 12433), (12, 12586), (13, 12607), (14, 12652), (15, 12673), (16, 12688), (17, 12799),

Gene: Myrale\_21 Start: 12268, Stop: 13211, Start Num: 1

Candidate Starts for Myrale\_21:

(Start: 1 @12268 has 17 MA's), (Start: 2 @12340 has 76 MA's), (3, 12484), (4, 12577), (5, 12601), (6, 12613), (7, 12637), (8, 12655), (9, 12679), (11, 12838), (12, 12991), (13, 13012), (14, 13057), (15, 13078), (16, 13093), (17, 13204),

Gene: NelitzaMV\_21 Start: 12539, Stop: 13410, Start Num: 2

Candidate Starts for NelitzaMV\_21:

(Start: 1 @12467 has 17 MA's), (Start: 2 @12539 has 76 MA's), (3, 12683), (4, 12776), (5, 12800), (6, 12812), (7, 12836), (8, 12854), (9, 12878), (11, 13037), (12, 13190), (13, 13211), (14, 13256), (15, 13277), (16, 13292), (17, 13403),

Gene: Nimrod\_21 Start: 12643, Stop: 13586, Start Num: 1

Candidate Starts for Nimrod\_21:

(Start: 1 @12643 has 17 MA's), (Start: 2 @12715 has 76 MA's), (3, 12859), (4, 12952), (5, 12976), (6, 12988), (7, 13012), (8, 13030), (9, 13054), (11, 13213), (12, 13366), (13, 13387), (14, 13432), (15, 13453), (16, 13468), (17, 13579),

Gene: NoSleep\_22 Start: 12215, Stop: 13086, Start Num: 2

Candidate Starts for NoSleep\_22:

(Start: 1 @12143 has 17 MA's), (Start: 2 @12215 has 76 MA's), (3, 12359), (4, 12452), (5, 12476), (6, 12488), (7, 12512), (8, 12530), (9, 12554), (11, 12713), (12, 12866), (13, 12887), (14, 12932), (15, 12953), (16, 12968), (17, 13079),

Gene: OrionPax\_22 Start: 12218, Stop: 13089, Start Num: 2

Candidate Starts for OrionPax\_22:

(Start: 1 @12146 has 17 MA's), (Start: 2 @12218 has 76 MA's), (3, 12362), (4, 12455), (5, 12479), (6, 12491), (7, 12515), (8, 12533), (9, 12557), (11, 12716), (12, 12869), (13, 12890), (14, 12935), (15, 12956), (16, 12971), (17, 13082),

Gene: Paperbeatsrock\_23 Start: 13450, Stop: 14321, Start Num: 2

Candidate Starts for Paperbeatsrock\_23:

(Start: 1 @13378 has 17 MA's), (Start: 2 @13450 has 76 MA's), (3, 13594), (4, 13687), (5, 13711), (6, 13723), (7, 13747), (8, 13765), (9, 13789), (11, 13948), (12, 14101), (13, 14122), (14, 14167), (15, 14188), (16, 14203), (17, 14314),

Gene: Phaja\_20 Start: 12057, Stop: 13003, Start Num: 1

Candidate Starts for Phaja\_20:

(Start: 1 @12057 has 17 MA's), (Start: 2 @12129 has 76 MA's), (3, 12273), (4, 12366), (5, 12390), (6, 12402), (7, 12426), (8, 12444), (9, 12468), (11, 12627), (12, 12780), (13, 12801), (14, 12846), (15, 12867), (16, 12882), (17, 12993),

Gene: Pharsalus\_22 Start: 13178, Stop: 14121, Start Num: 1

Candidate Starts for Pharsalus\_22:

(Start: 1 @13178 has 17 MA's), (Start: 2 @13250 has 76 MA's), (3, 13394), (4, 13487), (5, 13511), (6, 13523), (7, 13547), (8, 13565), (9, 13589), (11, 13748), (12, 13901), (13, 13922), (14, 13967), (15, 13988), (16, 14003), (17, 14114),

Gene: Quallification\_22 Start: 12676, Stop: 13547, Start Num: 2

Candidate Starts for Quallification\_22:

(Start: 1 @12604 has 17 MA's), (Start: 2 @12676 has 76 MA's), (3, 12820), (4, 12913), (5, 12937), (6, 12949), (7, 12973), (8, 12991), (9, 13015), (11, 13174), (12, 13327), (13, 13348), (14, 13393), (15, 13414), (16, 13429), (17, 13540),

Gene: Rimmer\_20 Start: 12036, Stop: 12907, Start Num: 2

Candidate Starts for Rimmer\_20:

(Start: 1 @11964 has 17 MA's), (Start: 2 @12036 has 76 MA's), (3, 12180), (4, 12273), (5, 12297), (6, 12309), (7, 12333), (8, 12351), (9, 12375), (11, 12534), (12, 12687), (13, 12708), (14, 12753), (15, 12774), (16, 12789), (17, 12900),

Gene: Saints25\_22 Start: 12137, Stop: 13008, Start Num: 2

Candidate Starts for Saints25\_22:

(Start: 1 @12065 has 17 MA's), (Start: 2 @12137 has 76 MA's), (3, 12281), (4, 12374), (5, 12398), (6, 12410), (7, 12434), (8, 12452), (9, 12476), (11, 12635), (12, 12788), (13, 12809), (14, 12854), (15, 12875), (16, 12890), (17, 13001),

Gene: Sassay\_20 Start: 11977, Stop: 12848, Start Num: 2

Candidate Starts for Sassay\_20:

(Start: 1 @11905 has 17 MA's), (Start: 2 @11977 has 76 MA's), (3, 12121), (4, 12214), (5, 12238), (6, 12250), (7, 12274), (8, 12292), (9, 12316), (11, 12475), (12, 12628), (13, 12649), (14, 12694), (15, 12715), (16, 12730), (17, 12841),

Gene: ShamWow\_21 Start: 12470, Stop: 13341, Start Num: 2

Candidate Starts for ShamWow\_21:

(Start: 1 @12398 has 17 MA's), (Start: 2 @12470 has 76 MA's), (3, 12614), (4, 12707), (5, 12731), (6, 12743), (7, 12767), (8, 12785), (9, 12809), (11, 12968), (12, 13121), (13, 13142), (14, 13187), (15, 13208), (16, 13223), (17, 13334),

Gene: ShereKhan\_23 Start: 13456, Stop: 14327, Start Num: 2

Candidate Starts for ShereKhan\_23:

(Start: 1 @13384 has 17 MA's), (Start: 2 @13456 has 76 MA's), (3, 13600), (4, 13693), (5, 13717), (6, 13729), (7, 13753), (8, 13771), (9, 13795), (11, 13954), (12, 14107), (13, 14128), (14, 14173), (15, 14194), (16, 14209), (17, 14320),

Gene: Simpliphy\_22 Start: 12218, Stop: 13089, Start Num: 2

Candidate Starts for Simpliphy\_22:

(Start: 1 @12146 has 17 MA's), (Start: 2 @12218 has 76 MA's), (3, 12362), (4, 12455), (5, 12479), (6, 12491), (7, 12515), (8, 12533), (9, 12557), (11, 12716), (12, 12869), (13, 12890), (14, 12935), (15, 12956), (16, 12971), (17, 13082),

Gene: SophKB\_21 Start: 12397, Stop: 13340, Start Num: 1

Candidate Starts for SophKB\_21:

(Start: 1 @12397 has 17 MA's), (Start: 2 @12469 has 76 MA's), (3, 12613), (4, 12706), (5, 12730), (6, 12742), (7, 12766), (8, 12784), (9, 12808), (11, 12967), (12, 13120), (13, 13141), (14, 13186), (15, 13207), (16, 13222), (17, 13333),

Gene: Sotrice96\_21 Start: 12425, Stop: 13296, Start Num: 2

Candidate Starts for Sotrice96\_21:

(Start: 1 @12353 has 17 MA's), (Start: 2 @12425 has 76 MA's), (3, 12569), (4, 12662), (5, 12686), (6, 12698), (7, 12722), (8, 12740), (9, 12764), (11, 12923), (12, 13076), (13, 13097), (14, 13142), (15, 13163), (16, 13178), (17, 13289),

Gene: Stank\_23 Start: 12463, Stop: 13337, Start Num: 2

Candidate Starts for Stank\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: Stark\_22 Start: 12231, Stop: 13102, Start Num: 2

Candidate Starts for Stark\_22:

(Start: 1 @12159 has 17 MA's), (Start: 2 @12231 has 76 MA's), (3, 12375), (4, 12468), (5, 12492), (6, 12504), (7, 12528), (8, 12546), (9, 12570), (11, 12729), (12, 12882), (13, 12903), (14, 12948), (15, 12969), (16, 12984), (17, 13095),

Gene: StellaBean\_21 Start: 12397, Stop: 13340, Start Num: 1

Candidate Starts for StellaBean\_21:

(Start: 1 @12397 has 17 MA's), (Start: 2 @12469 has 76 MA's), (3, 12613), (4, 12706), (5, 12730), (6, 12742), (7, 12766), (8, 12784), (9, 12808), (11, 12967), (12, 13120), (13, 13141), (14, 13186), (15, 13207), (16, 13222), (17, 13333),

Gene: StolenFromERC\_23 Start: 12463, Stop: 13334, Start Num: 2

Candidate Starts for StolenFromERC\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: TBrady12\_23 Start: 12460, Stop: 13331, Start Num: 2

Candidate Starts for TBrady12\_23:

(Start: 1 @12388 has 17 MA's), (Start: 2 @12460 has 76 MA's), (3, 12604), (4, 12697), (5, 12721), (6, 12733), (7, 12757), (8, 12775), (9, 12799), (10, 12877), (11, 12958), (12, 13111), (13, 13132), (14, 13177), (15, 13198), (16, 13213), (17, 13324),

Gene: Tarkin\_23 Start: 13459, Stop: 14330, Start Num: 2

Candidate Starts for Tarkin\_23:

(Start: 1 @13387 has 17 MA's), (Start: 2 @13459 has 76 MA's), (3, 13603), (4, 13696), (5, 13720), (6, 13732), (7, 13756), (8, 13774), (9, 13798), (11, 13957), (12, 14110), (13, 14131), (14, 14176), (15, 14197), (16, 14212), (17, 14323),

Gene: TeardropMSU\_20 Start: 12377, Stop: 13248, Start Num: 2

Candidate Starts for TeardropMSU\_20:

(Start: 1 @12305 has 17 MA's), (Start: 2 @12377 has 76 MA's), (3, 12521), (4, 12614), (5, 12638), (6, 12650), (7, 12674), (8, 12692), (9, 12716), (11, 12875), (12, 13028), (13, 13049), (14, 13094), (15, 13115), (16, 13130), (17, 13241),

Gene: Teaspoon\_21 Start: 11841, Stop: 12787, Start Num: 1

Candidate Starts for Teaspoon\_21:

(Start: 1 @11841 has 17 MA's), (Start: 2 @11913 has 76 MA's), (3, 12057), (4, 12150), (5, 12174), (6, 12186), (7, 12210), (8, 12228), (9, 12252), (11, 12411), (12, 12564), (13, 12585), (14, 12630), (15, 12651), (16, 12666), (17, 12777),

Gene: Terminus\_21 Start: 12560, Stop: 13431, Start Num: 2

Candidate Starts for Terminus\_21:

(Start: 1 @12488 has 17 MA's), (Start: 2 @12560 has 76 MA's), (3, 12704), (4, 12797), (5, 12821), (6, 12833), (7, 12857), (8, 12875), (9, 12899), (11, 13058), (12, 13211), (13, 13232), (14, 13277), (15, 13298), (16, 13313), (17, 13424),

Gene: Thresher\_22 Start: 13221, Stop: 14092, Start Num: 2

Candidate Starts for Thresher\_22:

(Start: 1 @13149 has 17 MA's), (Start: 2 @13221 has 76 MA's), (3, 13365), (4, 13458), (5, 13482), (6, 13494), (7, 13518), (8, 13536), (9, 13560), (11, 13719), (12, 13872), (13, 13893), (14, 13938), (15, 13959), (16, 13974), (17, 14085),

Gene: Tomaszewski\_20 Start: 12070, Stop: 12941, Start Num: 2

Candidate Starts for Tomaszewski\_20:

(Start: 1 @11998 has 17 MA's), (Start: 2 @12070 has 76 MA's), (3, 12214), (4, 12307), (5, 12331), (6, 12343), (7, 12367), (8, 12385), (9, 12409), (11, 12568), (12, 12721), (13, 12742), (14, 12787), (15, 12808), (16, 12823), (17, 12934),

Gene: Traaww1\_18 Start: 12115, Stop: 12986, Start Num: 2

Candidate Starts for Traaww1\_18:

(Start: 1 @12043 has 17 MA's), (Start: 2 @12115 has 76 MA's), (3, 12259), (4, 12352), (5, 12376), (6, 12388), (7, 12412), (8, 12430), (9, 12454), (11, 12613), (12, 12766), (13, 12787), (14, 12832), (15, 12853), (16, 12868), (17, 12979),

Gene: Tuco\_21 Start: 12469, Stop: 13343, Start Num: 2

Candidate Starts for Tuco\_21:

(Start: 1 @12397 has 17 MA's), (Start: 2 @12469 has 76 MA's), (3, 12613), (4, 12706), (5, 12730), (6, 12742), (7, 12766), (8, 12784), (9, 12808), (11, 12967), (12, 13120), (13, 13141), (14, 13186), (15,

13207), (16, 13222), (17, 13333),

Gene: Wiggin\_23 Start: 12463, Stop: 13337, Start Num: 2

Candidate Starts for Wiggin\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: Willez\_20 Start: 11977, Stop: 12848, Start Num: 2

Candidate Starts for Willez\_20:

(Start: 1 @11905 has 17 MA's), (Start: 2 @11977 has 76 MA's), (3, 12121), (4, 12214), (5, 12238), (6, 12250), (7, 12274), (8, 12292), (9, 12316), (11, 12475), (12, 12628), (13, 12649), (14, 12694), (15, 12715), (16, 12730), (17, 12841),

Gene: Xandras\_23 Start: 12463, Stop: 13334, Start Num: 2

Candidate Starts for Xandras\_23:

(Start: 1 @12391 has 17 MA's), (Start: 2 @12463 has 76 MA's), (3, 12607), (4, 12700), (5, 12724), (6, 12736), (7, 12760), (8, 12778), (9, 12802), (11, 12961), (12, 13114), (13, 13135), (14, 13180), (15, 13201), (16, 13216), (17, 13327),

Gene: YassJohnny\_21 Start: 12469, Stop: 13343, Start Num: 2

Candidate Starts for YassJohnny\_21:

(Start: 1 @12397 has 17 MA's), (Start: 2 @12469 has 76 MA's), (3, 12613), (4, 12706), (5, 12730), (6, 12742), (7, 12766), (8, 12784), (9, 12808), (11, 12967), (12, 13120), (13, 13141), (14, 13186), (15, 13207), (16, 13222), (17, 13333),

Gene: Youngblood\_21 Start: 12641, Stop: 13512, Start Num: 2

Candidate Starts for Youngblood\_21:

(Start: 1 @12569 has 17 MA's), (Start: 2 @12641 has 76 MA's), (3, 12785), (4, 12878), (5, 12902), (6, 12914), (7, 12938), (8, 12956), (9, 12980), (11, 13139), (12, 13292), (13, 13313), (14, 13358), (15, 13379), (16, 13394), (17, 13505),

Gene: xkcd\_21 Start: 12129, Stop: 13003, Start Num: 2

Candidate Starts for xkcd\_21:

(Start: 1 @12057 has 17 MA's), (Start: 2 @12129 has 76 MA's), (3, 12273), (4, 12366), (5, 12390), (6, 12402), (7, 12426), (8, 12444), (9, 12468), (11, 12627), (12, 12780), (13, 12801), (14, 12846), (15, 12867), (16, 12882), (17, 12993),