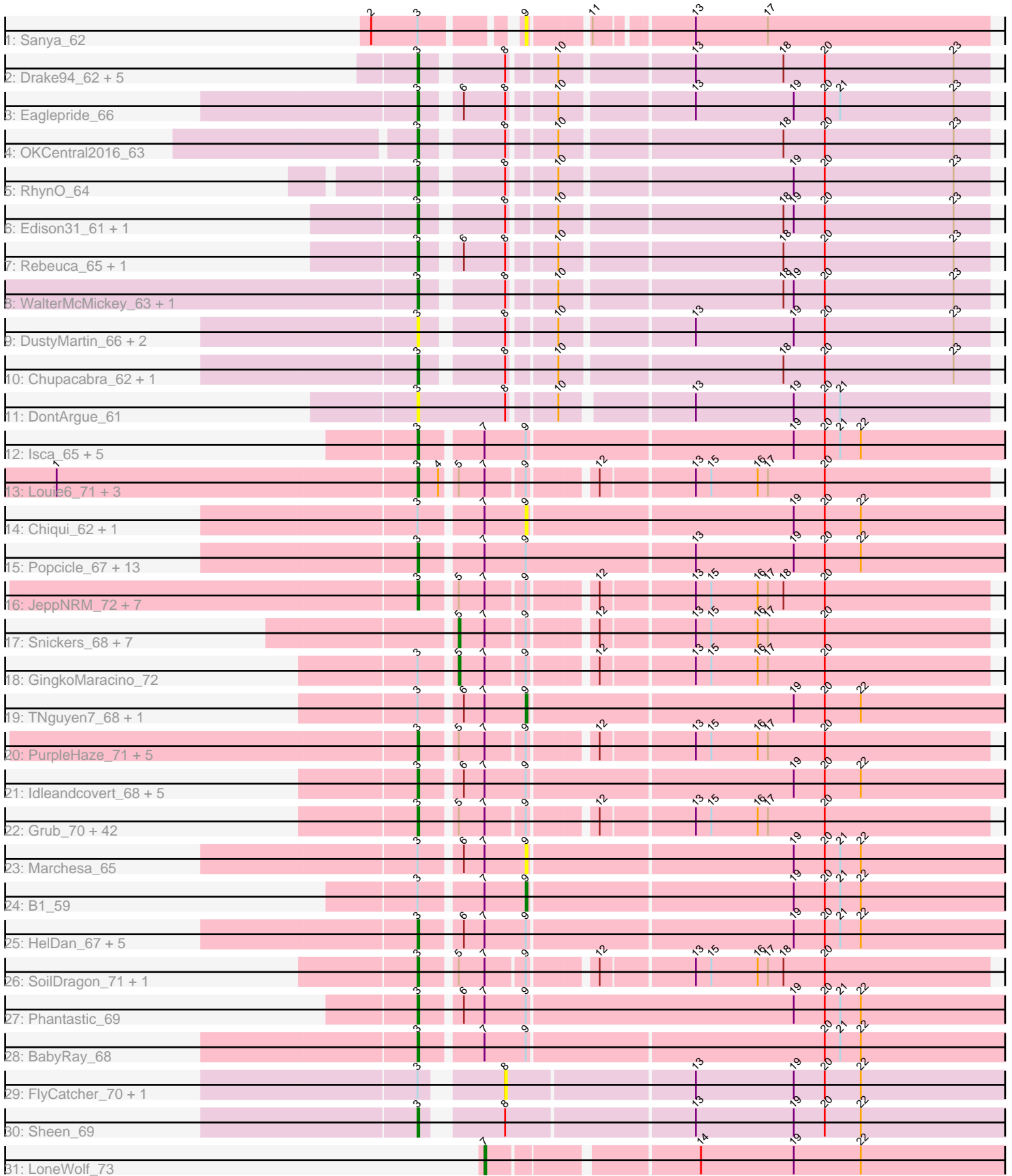


# Pham 202757



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 202757 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202757 has 138 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Sanya\_62
- Track 2 : Drake94\_62, KittenMittens\_61, Severus\_62, Poompha\_61, PeaceMeal1\_62, Trike\_61
- Track 3 : Eaglepride\_66
- Track 4 : OKCentral2016\_63
- Track 5 : RhynO\_64
- Track 6 : Edison31\_61, Topanga\_61
- Track 7 : Rebeuca\_65, Kristoff\_63
- Track 8 : WalterMcMickey\_63, Twister\_63
- Track 9 : DustyMartin\_66, Rowdy\_66, Shapes\_66
- Track 10 : Chupacabra\_62, Goose\_65
- Track 11 : DontArgue\_61
- Track 12 : Isca\_65, JF4\_65, Rockstar\_66, MK4\_67, MA5\_67, JF2\_65
- Track 13 : Louie6\_71, Misomonster\_73, BuzzBuzz\_66, KADY\_69
- Track 14 : Chiqui\_62, BabyJohn\_62
- Track 15 : Popcicle\_67, Caviar\_67, Todacoro\_67, Panamaxus\_65, Texage\_65, Pocahontas\_66, Lambert1\_67, Norbert\_63, ResDef\_65, QuinnKiro\_66, Margo\_67, Hookmount\_67, Veracruz\_64, Noella\_67
- Track 16 : JeppNRM\_72, HaveUMetTed\_72, PhishRPhriends\_68, Gemma\_69, Kalb97\_72, OlanP\_70, Manu\_71, ACFishhook\_69
- Track 17 : Snickers\_68, Mainiac\_71, Daishi\_71, JHC117\_68, Sabia\_70, MadMarie\_70, Dieselweasel\_72, Tiffany\_71
- Track 18 : GingkoMaracino\_72
- Track 19 : TNguyen7\_68, Puppy\_68
- Track 20 : PurpleHaze\_71, Heliosoles\_69, Groupthink\_72, Kalnoky\_72, Marius\_72, Zetzy\_69
- Track 21 : Idleandcovert\_68, SaturnRing\_67, BlueBird\_70, Bugatti\_67, Giroux\_66, Pistachio\_67
- Track 22 : Grub\_70, Cullens\_72, JenCasNa\_73, BreSam8\_72, Sabinator\_70, Methuselah\_65, P28Green\_72, Lilith\_70, Ollie\_72, Pembroke\_72, Marie\_70, Penny1\_72, MoneyMay\_71, LugYA\_75, Microwolf\_68, Watson\_71, EpicPhail\_73, DaHudson\_71, StepMih\_71, Fernando\_72, Hercules11\_72, Taurus\_73, AgronaGT15\_69, Farber\_72, Soshari\_74, PGHhamlin\_74, Phoxy\_72, PotatoSplit\_73, Vix\_68, Colbster\_68, MuchMore\_75, Malinsilva\_74, MarQuardt\_72, Rummer\_71, Spike509\_72, Grum1\_71, Aglet\_73, Anubis\_75, LBerry\_73, Wooldri\_74, Beauxregard13\_71, SoYo\_69, AugsMagnumOpus\_75
- Track 23 : Marchesa\_65

- Track 24 : B1\_59
- Track 25 : HelDan\_67, DropBear\_65, Scout\_66, Kachowdy\_65, Fred313\_65, Heathen\_67
- Track 26 : SoilDragon\_71, Jobu08\_68
- Track 27 : Phantastic\_69
- Track 28 : BabyRay\_68
- Track 29 : FlyCatcher\_70, Toro\_68
- Track 30 : Sheen\_69
- Track 31 : LoneWolf\_73

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

The start number called the most often in the published annotations is 3, it was called in 110 of the 122 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ACFishhook\_69, Aglet\_73, AgronaGT15\_69, Anubis\_75, AugsMagnumOpus\_75, BabyRay\_68, Beauxregard13\_71, BlueBird\_70, BreSam8\_72, Bugatti\_67, BuzzBuzz\_66, Caviar\_67, Chupacabra\_62, Colbster\_68, Cullens\_72, DaHudson\_71, DontArgue\_61, Drake94\_62, DropBear\_65, DustyMartin\_66, Eaglepride\_66, Edison31\_61, EpicPhail\_73, Farber\_72, Fernando\_72, Fred313\_65, Gemma\_69, Giroux\_66, Goose\_65, Groupthink\_72, Grub\_70, Grum1\_71, HaveUMetTed\_72, Heathen\_67, HelDan\_67, Heliosoles\_69, Hercules11\_72, Hookmount\_67, Idleandcovert\_68, Isca\_65, JF2\_65, JF4\_65, JenCasNa\_73, JeppNRM\_72, Jobu08\_68, KADY\_69, Kachowdy\_65, Kalb97\_72, Kalnoky\_72, KittenMittens\_61, Kristoff\_63, LBerry\_73, Lambert1\_67, Lilith\_70, Louie6\_71, LugYA\_75, MA5\_67, MK4\_67, Malinsilva\_74, Manu\_71, MarQuardt\_72, Margo\_67, Marie\_70, Marius\_72, Methuselah\_65, Microwolf\_68, Misomonster\_73, MoneyMay\_71, MuchMore\_75, Noella\_67, Norbert\_63, OKCentral2016\_63, OlanP\_70, Ollie\_72, P28Green\_72, PGHhamlin\_74, Panamaxus\_65, PeaceMeal1\_62, Pembroke\_72, Penny1\_72, Phantastic\_69, PhishRPhriends\_68, Phoxy\_72, Pistachio\_67, Pocahontas\_66, Poompha\_61, Popcicle\_67, PotatoSplit\_73, PurpleHaze\_71, QuinnKiro\_66, Rebeuca\_65, ResDef\_65, RhynO\_64, Rockstar\_66, Rowdy\_66, Rummer\_71, Sabinator\_70, SaturnRing\_67, Scout\_66, Severus\_62, Shapes\_66, Sheen\_69, SoYo\_69, SoilDragon\_71, Soshari\_74, Spike509\_72, StepMih\_71, Taurus\_73, Texage\_65, Todacoro\_67, Topanga\_61, Trike\_61, Twister\_63, Veracruz\_64, Vix\_68, WalterMcMickey\_63, Watson\_71, Wooldri\_74, Zetzy\_69,

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

- B1\_59, BabyJohn\_62, Chiqui\_62, FlyCatcher\_70, GingkoMaracino\_72, Marchesa\_65, Puppy\_68, Sanya\_62, TNguyen7\_68, Toro\_68,

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

- Daishi\_71, Dieselweasel\_72, JHC117\_68, LoneWolf\_73, MadMarie\_70, Mainiac\_71, Sabia\_70, Snickers\_68, Tiffany\_71,

**Summary by start number:**

Start 3:

- Found in 129 of 138 ( 93.5% ) of genes in pham

- Manual Annotations of this start: 110 of 122
- Called 92.2% of time when present
- Phage (with cluster) where this start called: ACFishhook\_69 (A3), Aglet\_73 (A3), AgronaGT15\_69 (A3), Anubis\_75 (A3), AugsMagnumOpus\_75 (A3), BabyRay\_68 (A3), Beauxregard13\_71 (A3), BlueBird\_70 (A3), BreSam8\_72 (A3), Bugatti\_67 (A3), BuzzBuzz\_66 (A3), Caviar\_67 (A3), Chupacabra\_62 (A10), Colbster\_68 (A3), Cullens\_72 (A3), DaHudson\_71 (A3), DontArgue\_61 (A10), Drake94\_62 (A10), DropBear\_65 (A3), DustyMartin\_66 (A10), Eaglepride\_66 (A10), Edison31\_61 (A10), EpicPhail\_73 (A3), Farber\_72 (A3), Fernando\_72 (A3), Fred313\_65 (A3), Gemma\_69 (A3), Giroux\_66 (A3), Goose\_65 (A10), Groupthink\_72 (A3), Grub\_70 (A3), Grum1\_71 (A3), HaveUMetTed\_72 (A3), Heathen\_67 (A3), HelDan\_67 (A3), Heliosoles\_69 (A3), Hercules11\_72 (A3), Hookmount\_67 (A3), Idleandcovert\_68 (A3), Isca\_65 (A3), JF2\_65 (A3), JF4\_65 (A3), JenCasNa\_73 (A3), JeppNRM\_72 (A3), Jobu08\_68 (A3), KADY\_69 (A3), Kachowdy\_65 (A3), Kalb97\_72 (A3), Kalnoky\_72 (A3), KittenMittens\_61 (A10), Kristoff\_63 (A10), LBerry\_73 (A3), Lambert1\_67 (A3), Lilith\_70 (A3), Louie6\_71 (A3), LugYA\_75 (A3), MA5\_67 (A3), MK4\_67 (A3), Malinsilva\_74 (A3), Manu\_71 (A3), MarQuardt\_72 (A3), Margo\_67 (A3), Marie\_70 (A3), Marius\_72 (A3), Methuselah\_65 (A3), Microwolf\_68 (A3), Misomonster\_73 (A3), MoneyMay\_71 (A3), MuchMore\_75 (A3), Noella\_67 (A3), Norbert\_63 (A3), OKCentral2016\_63 (A10), OlanP\_70 (A3), Ollie\_72 (A3), P28Green\_72 (A3), PGHhamlin\_74 (A3), Panamaxus\_65 (A3), PeaceMeal1\_62 (A10), Pembroke\_72 (A3), Penny1\_72 (A3), Phantastic\_69 (A3), PhishRPhriends\_68 (A3), Phoxy\_72 (A3), Pistachio\_67 (A3), Pocahontas\_66 (A3), Poompha\_61 (A10), Popcicle\_67 (A3), PotatoSplit\_73 (A3), PurpleHaze\_71 (A3), QuinnKiro\_66 (A3), Rebeuca\_65 (A10), ResDef\_65 (A3), RhynO\_64 (A10), Rockstar\_66 (A3), Rowdy\_66 (A10), Rummer\_71 (A3), Sabinator\_70 (A3), SaturnRing\_67 (A3), Scout\_66 (A3), Severus\_62 (A10), Shapes\_66 (A10), Sheen\_69 (A7), SoYo\_69 (A3), SoilDragon\_71 (A3), Soshari\_74 (A3), Spike509\_72 (A3), StepMih\_71 (A3), Taurus\_73 (A3), Texage\_65 (A3), Todacoro\_67 (A3), Topanga\_61 (A10), Trike\_61 (A10), Twister\_63 (A10), Veracruz\_64 (A3), Vix\_68 (A3), WalterMcMickey\_63 (A10), Watson\_71 (A3), Wooldri\_74 (A3), Zetzy\_69 (A3),

#### Start 5:

- Found in 72 of 138 ( 52.2% ) of genes in pham
- Manual Annotations of this start: 8 of 122
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Daishi\_71 (A3), Dieselweasel\_72 (A3), GingkoMaracino\_72 (A3), JHC117\_68 (A3), MadMarie\_70 (A3), Mainiac\_71 (A3), Sabia\_70 (A3), Snickers\_68 (A3), Tiffany\_71 (A3),

#### Start 7:

- Found in 113 of 138 ( 81.9% ) of genes in pham
- Manual Annotations of this start: 1 of 122
- Called 0.9% of time when present
- Phage (with cluster) where this start called: LoneWolf\_73 (A9),

#### Start 8:

- Found in 24 of 138 ( 17.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 8.3% of time when present
- Phage (with cluster) where this start called: FlyCatcher\_70 (A7), Toro\_68 (A7),

#### Start 9:

- Found in 113 of 138 ( 81.9% ) of genes in pham
- Manual Annotations of this start: 3 of 122
- Called 6.2% of time when present
- Phage (with cluster) where this start called: B1\_59 (A3), BabyJohn\_62 (A3), Chiqui\_62 (A3), Marchesa\_65 (A3), Puppy\_68 (A3), Sanya\_62 (A1), TNguyen7\_68 (A3),

### **Summary by clusters:**

There are 5 clusters represented in this pham: A1, A9, A3, A10, A7,

Info for manual annotations of cluster A10:

- Start number 3 was manually annotated 17 times for cluster A10.

Info for manual annotations of cluster A3:

- Start number 3 was manually annotated 92 times for cluster A3.
- Start number 5 was manually annotated 8 times for cluster A3.
- Start number 9 was manually annotated 3 times for cluster A3.

Info for manual annotations of cluster A7:

- Start number 3 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster A9:

- Start number 7 was manually annotated 1 time for cluster A9.

### **Gene Information:**

Gene: ACFishhook\_69 Start: 42330, Stop: 42022, Start Num: 3

Candidate Starts for ACFishhook\_69:

(Start: 3 @42330 has 110 MA's), (Start: 5 @42312 has 8 MA's), (Start: 7 @42297 has 1 MA's), (Start: 9 @42276 has 3 MA's), (12, 42243), (13, 42192), (15, 42183), (16, 42156), (17, 42150), (18, 42141), (20, 42117),

Gene: Aglet\_73 Start: 42442, Stop: 42134, Start Num: 3

Candidate Starts for Aglet\_73:

(Start: 3 @42442 has 110 MA's), (Start: 5 @42424 has 8 MA's), (Start: 7 @42409 has 1 MA's), (Start: 9 @42388 has 3 MA's), (12, 42355), (13, 42304), (15, 42295), (16, 42268), (17, 42262), (20, 42229),

Gene: AgronaGT15\_69 Start: 42290, Stop: 41982, Start Num: 3

Candidate Starts for AgronaGT15\_69:

(Start: 3 @42290 has 110 MA's), (Start: 5 @42272 has 8 MA's), (Start: 7 @42257 has 1 MA's), (Start: 9 @42236 has 3 MA's), (12, 42203), (13, 42152), (15, 42143), (16, 42116), (17, 42110), (20, 42077),

Gene: Anubis\_75 Start: 42328, Stop: 42020, Start Num: 3

Candidate Starts for Anubis\_75:

(Start: 3 @42328 has 110 MA's), (Start: 5 @42310 has 8 MA's), (Start: 7 @42295 has 1 MA's), (Start: 9 @42274 has 3 MA's), (12, 42241), (13, 42190), (15, 42181), (16, 42154), (17, 42148), (20, 42115),

Gene: AugsMagnumOpus\_75 Start: 42433, Stop: 42125, Start Num: 3

Candidate Starts for AugsMagnumOpus\_75:

(Start: 3 @42433 has 110 MA's), (Start: 5 @42415 has 8 MA's), (Start: 7 @42400 has 1 MA's), (Start: 9 @42379 has 3 MA's), (12, 42346), (13, 42295), (15, 42286), (16, 42259), (17, 42253), (20, 42220),

Gene: B1\_59 Start: 40295, Stop: 39984, Start Num: 9

Candidate Starts for B1\_59:

(Start: 3 @40352 has 110 MA's), (Start: 7 @40319 has 1 MA's), (Start: 9 @40295 has 3 MA's), (19, 40145), (20, 40127), (21, 40118), (22, 40106),

Gene: BabyJohn\_62 Start: 42122, Stop: 41811, Start Num: 9

Candidate Starts for BabyJohn\_62:

(Start: 3 @42179 has 110 MA's), (Start: 7 @42146 has 1 MA's), (Start: 9 @42122 has 3 MA's), (19, 41972), (20, 41954), (22, 41933),

Gene: BabyRay\_68 Start: 42157, Stop: 41789, Start Num: 3

Candidate Starts for BabyRay\_68:

(Start: 3 @42157 has 110 MA's), (Start: 7 @42124 has 1 MA's), (Start: 9 @42100 has 3 MA's), (20, 41932), (21, 41923), (22, 41911),

Gene: Beauxregard13\_71 Start: 42445, Stop: 42137, Start Num: 3

Candidate Starts for Beauxregard13\_71:

(Start: 3 @42445 has 110 MA's), (Start: 5 @42427 has 8 MA's), (Start: 7 @42412 has 1 MA's), (Start: 9 @42391 has 3 MA's), (12, 42358), (13, 42307), (15, 42298), (16, 42271), (17, 42265), (20, 42232),

Gene: BlueBird\_70 Start: 42204, Stop: 41836, Start Num: 3

Candidate Starts for BlueBird\_70:

(Start: 3 @42204 has 110 MA's), (6, 42183), (Start: 7 @42171 has 1 MA's), (Start: 9 @42147 has 3 MA's), (19, 41997), (20, 41979), (22, 41958),

Gene: BreSam8\_72 Start: 42435, Stop: 42127, Start Num: 3

Candidate Starts for BreSam8\_72:

(Start: 3 @42435 has 110 MA's), (Start: 5 @42417 has 8 MA's), (Start: 7 @42402 has 1 MA's), (Start: 9 @42381 has 3 MA's), (12, 42348), (13, 42297), (15, 42288), (16, 42261), (17, 42255), (20, 42222),

Gene: Bugatti\_67 Start: 42204, Stop: 41836, Start Num: 3

Candidate Starts for Bugatti\_67:

(Start: 3 @42204 has 110 MA's), (6, 42183), (Start: 7 @42171 has 1 MA's), (Start: 9 @42147 has 3 MA's), (19, 41997), (20, 41979), (22, 41958),

Gene: BuzzBuzz\_66 Start: 42469, Stop: 42161, Start Num: 3

Candidate Starts for BuzzBuzz\_66:

(1, 42676), (Start: 3 @42469 has 110 MA's), (4, 42457), (Start: 5 @42451 has 8 MA's), (Start: 7 @42436 has 1 MA's), (Start: 9 @42415 has 3 MA's), (12, 42382), (13, 42331), (15, 42322), (16, 42295), (17, 42289), (20, 42256),

Gene: Caviar\_67 Start: 42160, Stop: 41789, Start Num: 3

Candidate Starts for Caviar\_67:

(Start: 3 @42160 has 110 MA's), (Start: 7 @42127 has 1 MA's), (Start: 9 @42103 has 3 MA's), (13, 42007), (19, 41950), (20, 41932), (22, 41911),

Gene: Chiqui\_62 Start: 42131, Stop: 41820, Start Num: 9

Candidate Starts for Chiqui\_62:

(Start: 3 @42188 has 110 MA's), (Start: 7 @42155 has 1 MA's), (Start: 9 @42131 has 3 MA's), (19, 41981), (20, 41963), (22, 41942),

Gene: Chupacabra\_62 Start: 41312, Stop: 41004, Start Num: 3

Candidate Starts for Chupacabra\_62:

(Start: 3 @41312 has 110 MA's), (8, 41270), (10, 41246), (18, 41123), (20, 41099), (23, 41024),

Gene: Colbster\_68 Start: 42445, Stop: 42137, Start Num: 3

Candidate Starts for Colbster\_68:

(Start: 3 @42445 has 110 MA's), (Start: 5 @42427 has 8 MA's), (Start: 7 @42412 has 1 MA's), (Start: 9 @42391 has 3 MA's), (12, 42358), (13, 42307), (15, 42298), (16, 42271), (17, 42265), (20, 42232),

Gene: Cullens\_72 Start: 42441, Stop: 42133, Start Num: 3

Candidate Starts for Cullens\_72:

(Start: 3 @42441 has 110 MA's), (Start: 5 @42423 has 8 MA's), (Start: 7 @42408 has 1 MA's), (Start: 9 @42387 has 3 MA's), (12, 42354), (13, 42303), (15, 42294), (16, 42267), (17, 42261), (20, 42228),

Gene: DaHudson\_71 Start: 42434, Stop: 42126, Start Num: 3

Candidate Starts for DaHudson\_71:

(Start: 3 @42434 has 110 MA's), (Start: 5 @42416 has 8 MA's), (Start: 7 @42401 has 1 MA's), (Start: 9 @42380 has 3 MA's), (12, 42347), (13, 42296), (15, 42287), (16, 42260), (17, 42254), (20, 42221),

Gene: Daishi\_71 Start: 41292, Stop: 41002, Start Num: 5

Candidate Starts for Daishi\_71:

(Start: 5 @41292 has 8 MA's), (Start: 7 @41277 has 1 MA's), (Start: 9 @41256 has 3 MA's), (12, 41223), (13, 41172), (15, 41163), (16, 41136), (17, 41130), (20, 41097),

Gene: Dieselweasel\_72 Start: 42426, Stop: 42136, Start Num: 5

Candidate Starts for Dieselweasel\_72:

(Start: 5 @42426 has 8 MA's), (Start: 7 @42411 has 1 MA's), (Start: 9 @42390 has 3 MA's), (12, 42357), (13, 42306), (15, 42297), (16, 42270), (17, 42264), (20, 42231),

Gene: DontArgue\_61 Start: 40445, Stop: 40131, Start Num: 3

Candidate Starts for DontArgue\_61:

(Start: 3 @40445 has 110 MA's), (8, 40394), (10, 40370), (13, 40301), (19, 40244), (20, 40226), (21, 40217),

Gene: Drake94\_62 Start: 40387, Stop: 40079, Start Num: 3

Candidate Starts for Drake94\_62:

(Start: 3 @40387 has 110 MA's), (8, 40345), (10, 40321), (13, 40249), (18, 40198), (20, 40174), (23, 40099),

Gene: DropBear\_65 Start: 42103, Stop: 41738, Start Num: 3

Candidate Starts for DropBear\_65:

(Start: 3 @42103 has 110 MA's), (6, 42082), (Start: 7 @42070 has 1 MA's), (Start: 9 @42046 has 3 MA's), (19, 41896), (20, 41878), (21, 41869), (22, 41857),

Gene: DustyMartin\_66 Start: 41423, Stop: 41115, Start Num: 3

Candidate Starts for DustyMartin\_66:

(Start: 3 @41423 has 110 MA's), (8, 41381), (10, 41357), (13, 41285), (19, 41228), (20, 41210), (23, 41135),

Gene: Eaglepride\_66 Start: 41419, Stop: 41111, Start Num: 3

Candidate Starts for Eaglepride\_66:

(Start: 3 @41419 has 110 MA's), (6, 41401), (8, 41377), (10, 41353), (13, 41281), (19, 41224), (20, 41206), (21, 41197), (23, 41131),

Gene: Edison31\_61 Start: 41187, Stop: 40879, Start Num: 3

Candidate Starts for Edison31\_61:

(Start: 3 @41187 has 110 MA's), (8, 41145), (10, 41121), (18, 40998), (19, 40992), (20, 40974), (23, 40899),

Gene: EpicPhail\_73 Start: 42445, Stop: 42137, Start Num: 3

Candidate Starts for EpicPhail\_73:

(Start: 3 @42445 has 110 MA's), (Start: 5 @42427 has 8 MA's), (Start: 7 @42412 has 1 MA's), (Start: 9 @42391 has 3 MA's), (12, 42358), (13, 42307), (15, 42298), (16, 42271), (17, 42265), (20, 42232),

Gene: Farber\_72 Start: 42431, Stop: 42123, Start Num: 3

Candidate Starts for Farber\_72:

(Start: 3 @42431 has 110 MA's), (Start: 5 @42413 has 8 MA's), (Start: 7 @42398 has 1 MA's), (Start: 9 @42377 has 3 MA's), (12, 42344), (13, 42293), (15, 42284), (16, 42257), (17, 42251), (20, 42218),

Gene: Fernando\_72 Start: 42441, Stop: 42133, Start Num: 3

Candidate Starts for Fernando\_72:

(Start: 3 @42441 has 110 MA's), (Start: 5 @42423 has 8 MA's), (Start: 7 @42408 has 1 MA's), (Start: 9 @42387 has 3 MA's), (12, 42354), (13, 42303), (15, 42294), (16, 42267), (17, 42261), (20, 42228),

Gene: FlyCatcher\_70 Start: 45930, Stop: 45607, Start Num: 8

Candidate Starts for FlyCatcher\_70:

(Start: 3 @45966 has 110 MA's), (8, 45930), (13, 45825), (19, 45768), (20, 45750), (22, 45729),

Gene: Fred313\_65 Start: 41797, Stop: 41432, Start Num: 3

Candidate Starts for Fred313\_65:

(Start: 3 @41797 has 110 MA's), (6, 41776), (Start: 7 @41764 has 1 MA's), (Start: 9 @41740 has 3 MA's), (19, 41590), (20, 41572), (21, 41563), (22, 41551),

Gene: Gemma\_69 Start: 42254, Stop: 41946, Start Num: 3

Candidate Starts for Gemma\_69:

(Start: 3 @42254 has 110 MA's), (Start: 5 @42236 has 8 MA's), (Start: 7 @42221 has 1 MA's), (Start: 9 @42200 has 3 MA's), (12, 42167), (13, 42116), (15, 42107), (16, 42080), (17, 42074), (18, 42065), (20, 42041),

Gene: GingkoMaracino\_72 Start: 42309, Stop: 42019, Start Num: 5

Candidate Starts for GingkoMaracino\_72:

(Start: 3 @42327 has 110 MA's), (Start: 5 @42309 has 8 MA's), (Start: 7 @42294 has 1 MA's), (Start: 9 @42273 has 3 MA's), (12, 42240), (13, 42189), (15, 42180), (16, 42153), (17, 42147), (20, 42114),

Gene: Giroux\_66 Start: 42203, Stop: 41835, Start Num: 3

Candidate Starts for Giroux\_66:

(Start: 3 @42203 has 110 MA's), (6, 42182), (Start: 7 @42170 has 1 MA's), (Start: 9 @42146 has 3 MA's), (19, 41996), (20, 41978), (22, 41957),

Gene: Goose\_65 Start: 41128, Stop: 40820, Start Num: 3

Candidate Starts for Goose\_65:

(Start: 3 @41128 has 110 MA's), (8, 41086), (10, 41062), (18, 40939), (20, 40915), (23, 40840),

Gene: Groupthink\_72 Start: 42258, Stop: 41950, Start Num: 3



Candidate Starts for Groupthink\_72:

(Start: 3 @42258 has 110 MA's), (Start: 5 @42240 has 8 MA's), (Start: 7 @42225 has 1 MA's), (Start: 9 @42204 has 3 MA's), (12, 42171), (13, 42120), (15, 42111), (16, 42084), (17, 42078), (20, 42045),

Gene: Grub\_70 Start: 42433, Stop: 42125, Start Num: 3

Candidate Starts for Grub\_70:

(Start: 3 @42433 has 110 MA's), (Start: 5 @42415 has 8 MA's), (Start: 7 @42400 has 1 MA's), (Start: 9 @42379 has 3 MA's), (12, 42346), (13, 42295), (15, 42286), (16, 42259), (17, 42253), (20, 42220),

Gene: Grum1\_71 Start: 42441, Stop: 42133, Start Num: 3

Candidate Starts for Grum1\_71:

(Start: 3 @42441 has 110 MA's), (Start: 5 @42423 has 8 MA's), (Start: 7 @42408 has 1 MA's), (Start: 9 @42387 has 3 MA's), (12, 42354), (13, 42303), (15, 42294), (16, 42267), (17, 42261), (20, 42228),

Gene: HaveUMetTed\_72 Start: 42243, Stop: 41935, Start Num: 3

Candidate Starts for HaveUMetTed\_72:

(Start: 3 @42243 has 110 MA's), (Start: 5 @42225 has 8 MA's), (Start: 7 @42210 has 1 MA's), (Start: 9 @42189 has 3 MA's), (12, 42156), (13, 42105), (15, 42096), (16, 42069), (17, 42063), (18, 42054), (20, 42030),

Gene: Heathen\_67 Start: 41892, Stop: 41527, Start Num: 3

Candidate Starts for Heathen\_67:

(Start: 3 @41892 has 110 MA's), (6, 41871), (Start: 7 @41859 has 1 MA's), (Start: 9 @41835 has 3 MA's), (19, 41685), (20, 41667), (21, 41658), (22, 41646),

Gene: HelDan\_67 Start: 42108, Stop: 41743, Start Num: 3

Candidate Starts for HelDan\_67:

(Start: 3 @42108 has 110 MA's), (6, 42087), (Start: 7 @42075 has 1 MA's), (Start: 9 @42051 has 3 MA's), (19, 41901), (20, 41883), (21, 41874), (22, 41862),

Gene: Heliosoles\_69 Start: 42261, Stop: 41953, Start Num: 3

Candidate Starts for Heliosoles\_69:

(Start: 3 @42261 has 110 MA's), (Start: 5 @42243 has 8 MA's), (Start: 7 @42228 has 1 MA's), (Start: 9 @42207 has 3 MA's), (12, 42174), (13, 42123), (15, 42114), (16, 42087), (17, 42081), (20, 42048),

Gene: Hercules11\_72 Start: 42450, Stop: 42142, Start Num: 3

Candidate Starts for Hercules11\_72:

(Start: 3 @42450 has 110 MA's), (Start: 5 @42432 has 8 MA's), (Start: 7 @42417 has 1 MA's), (Start: 9 @42396 has 3 MA's), (12, 42363), (13, 42312), (15, 42303), (16, 42276), (17, 42270), (20, 42237),

Gene: Hookmount\_67 Start: 42161, Stop: 41790, Start Num: 3

Candidate Starts for Hookmount\_67:

(Start: 3 @42161 has 110 MA's), (Start: 7 @42128 has 1 MA's), (Start: 9 @42104 has 3 MA's), (13, 42008), (19, 41951), (20, 41933), (22, 41912),

Gene: Idleandcovert\_68 Start: 42204, Stop: 41836, Start Num: 3

Candidate Starts for Idleandcovert\_68:

(Start: 3 @42204 has 110 MA's), (6, 42183), (Start: 7 @42171 has 1 MA's), (Start: 9 @42147 has 3 MA's), (19, 41997), (20, 41979), (22, 41958),

Gene: Isca\_65 Start: 41657, Stop: 41289, Start Num: 3

Candidate Starts for Isca\_65:

(Start: 3 @41657 has 110 MA's), (Start: 7 @41624 has 1 MA's), (Start: 9 @41600 has 3 MA's), (19, 41450), (20, 41432), (21, 41423), (22, 41411),

Gene: JF2\_65 Start: 40352, Stop: 39984, Start Num: 3

Candidate Starts for JF2\_65:

(Start: 3 @40352 has 110 MA's), (Start: 7 @40319 has 1 MA's), (Start: 9 @40295 has 3 MA's), (19, 40145), (20, 40127), (21, 40118), (22, 40106),

Gene: JF4\_65 Start: 40352, Stop: 39984, Start Num: 3

Candidate Starts for JF4\_65:

(Start: 3 @40352 has 110 MA's), (Start: 7 @40319 has 1 MA's), (Start: 9 @40295 has 3 MA's), (19, 40145), (20, 40127), (21, 40118), (22, 40106),

Gene: JHC117\_68 Start: 42422, Stop: 42132, Start Num: 5

Candidate Starts for JHC117\_68:

(Start: 5 @42422 has 8 MA's), (Start: 7 @42407 has 1 MA's), (Start: 9 @42386 has 3 MA's), (12, 42353), (13, 42302), (15, 42293), (16, 42266), (17, 42260), (20, 42227),

Gene: JenCasNa\_73 Start: 42441, Stop: 42133, Start Num: 3

Candidate Starts for JenCasNa\_73:

(Start: 3 @42441 has 110 MA's), (Start: 5 @42423 has 8 MA's), (Start: 7 @42408 has 1 MA's), (Start: 9 @42387 has 3 MA's), (12, 42354), (13, 42303), (15, 42294), (16, 42267), (17, 42261), (20, 42228),

Gene: JeppNRM\_72 Start: 42259, Stop: 41951, Start Num: 3

Candidate Starts for JeppNRM\_72:

(Start: 3 @42259 has 110 MA's), (Start: 5 @42241 has 8 MA's), (Start: 7 @42226 has 1 MA's), (Start: 9 @42205 has 3 MA's), (12, 42172), (13, 42121), (15, 42112), (16, 42085), (17, 42079), (18, 42070), (20, 42046),

Gene: Jobu08\_68 Start: 42273, Stop: 41965, Start Num: 3

Candidate Starts for Jobu08\_68:

(Start: 3 @42273 has 110 MA's), (Start: 5 @42255 has 8 MA's), (Start: 7 @42240 has 1 MA's), (Start: 9 @42219 has 3 MA's), (12, 42186), (13, 42135), (15, 42126), (16, 42099), (17, 42093), (18, 42084), (20, 42060),

Gene: KADY\_69 Start: 42469, Stop: 42161, Start Num: 3

Candidate Starts for KADY\_69:

(1, 42676), (Start: 3 @42469 has 110 MA's), (4, 42457), (Start: 5 @42451 has 8 MA's), (Start: 7 @42436 has 1 MA's), (Start: 9 @42415 has 3 MA's), (12, 42382), (13, 42331), (15, 42322), (16, 42295), (17, 42289), (20, 42256),

Gene: Kachowdy\_65 Start: 42144, Stop: 41779, Start Num: 3

Candidate Starts for Kachowdy\_65:

(Start: 3 @42144 has 110 MA's), (6, 42123), (Start: 7 @42111 has 1 MA's), (Start: 9 @42087 has 3 MA's), (19, 41937), (20, 41919), (21, 41910), (22, 41898),

Gene: Kalb97\_72 Start: 42257, Stop: 41949, Start Num: 3

Candidate Starts for Kalb97\_72:

(Start: 3 @42257 has 110 MA's), (Start: 5 @42239 has 8 MA's), (Start: 7 @42224 has 1 MA's), (Start: 9 @42203 has 3 MA's), (12, 42170), (13, 42119), (15, 42110), (16, 42083), (17, 42077), (18, 42068), (20, 42044),

Gene: Kalnoky\_72 Start: 42255, Stop: 41947, Start Num: 3

Candidate Starts for Kalnoky\_72:

(Start: 3 @42255 has 110 MA's), (Start: 5 @42237 has 8 MA's), (Start: 7 @42222 has 1 MA's), (Start: 9 @42201 has 3 MA's), (12, 42168), (13, 42117), (15, 42108), (16, 42081), (17, 42075), (20, 42042),

Gene: KittenMittens\_61 Start: 40395, Stop: 40087, Start Num: 3

Candidate Starts for KittenMittens\_61:

(Start: 3 @40395 has 110 MA's), (8, 40353), (10, 40329), (13, 40257), (18, 40206), (20, 40182), (23, 40107),

Gene: Kristoff\_63 Start: 41709, Stop: 41401, Start Num: 3

Candidate Starts for Kristoff\_63:

(Start: 3 @41709 has 110 MA's), (6, 41691), (8, 41667), (10, 41643), (18, 41520), (20, 41496), (23, 41421),

Gene: LBerry\_73 Start: 42445, Stop: 42137, Start Num: 3

Candidate Starts for LBerry\_73:

(Start: 3 @42445 has 110 MA's), (Start: 5 @42427 has 8 MA's), (Start: 7 @42412 has 1 MA's), (Start: 9 @42391 has 3 MA's), (12, 42358), (13, 42307), (15, 42298), (16, 42271), (17, 42265), (20, 42232),

Gene: Lambert1\_67 Start: 42160, Stop: 41789, Start Num: 3

Candidate Starts for Lambert1\_67:

(Start: 3 @42160 has 110 MA's), (Start: 7 @42127 has 1 MA's), (Start: 9 @42103 has 3 MA's), (13, 42007), (19, 41950), (20, 41932), (22, 41911),

Gene: Lilith\_70 Start: 42434, Stop: 42126, Start Num: 3

Candidate Starts for Lilith\_70:

(Start: 3 @42434 has 110 MA's), (Start: 5 @42416 has 8 MA's), (Start: 7 @42401 has 1 MA's), (Start: 9 @42380 has 3 MA's), (12, 42347), (13, 42296), (15, 42287), (16, 42260), (17, 42254), (20, 42221),

Gene: LoneWolf\_73 Start: 42713, Stop: 42423, Start Num: 7

Candidate Starts for LoneWolf\_73:

(Start: 7 @42713 has 1 MA's), (14, 42602), (19, 42548), (22, 42509),

Gene: Louie6\_71 Start: 42471, Stop: 42163, Start Num: 3

Candidate Starts for Louie6\_71:

(1, 42678), (Start: 3 @42471 has 110 MA's), (4, 42459), (Start: 5 @42453 has 8 MA's), (Start: 7 @42438 has 1 MA's), (Start: 9 @42417 has 3 MA's), (12, 42384), (13, 42333), (15, 42324), (16, 42297), (17, 42291), (20, 42258),

Gene: LugYA\_75 Start: 42442, Stop: 42134, Start Num: 3

Candidate Starts for LugYA\_75:

(Start: 3 @42442 has 110 MA's), (Start: 5 @42424 has 8 MA's), (Start: 7 @42409 has 1 MA's), (Start: 9 @42388 has 3 MA's), (12, 42355), (13, 42304), (15, 42295), (16, 42268), (17, 42262), (20, 42229),

Gene: MA5\_67 Start: 41561, Stop: 41193, Start Num: 3

Candidate Starts for MA5\_67:

(Start: 3 @41561 has 110 MA's), (Start: 7 @41528 has 1 MA's), (Start: 9 @41504 has 3 MA's), (19, 41354), (20, 41336), (21, 41327), (22, 41315),

Gene: MK4\_67 Start: 41636, Stop: 41268, Start Num: 3

Candidate Starts for MK4\_67:

(Start: 3 @41636 has 110 MA's), (Start: 7 @41603 has 1 MA's), (Start: 9 @41579 has 3 MA's), (19, 41429), (20, 41411), (21, 41402), (22, 41390),

Gene: MadMarie\_70 Start: 42425, Stop: 42135, Start Num: 5

Candidate Starts for MadMarie\_70:

(Start: 5 @42425 has 8 MA's), (Start: 7 @42410 has 1 MA's), (Start: 9 @42389 has 3 MA's), (12, 42356), (13, 42305), (15, 42296), (16, 42269), (17, 42263), (20, 42230),

Gene: Mainiac\_71 Start: 42417, Stop: 42127, Start Num: 5

Candidate Starts for Mainiac\_71:

(Start: 5 @42417 has 8 MA's), (Start: 7 @42402 has 1 MA's), (Start: 9 @42381 has 3 MA's), (12, 42348), (13, 42297), (15, 42288), (16, 42261), (17, 42255), (20, 42222),

Gene: Malinsilva\_74 Start: 42433, Stop: 42125, Start Num: 3

Candidate Starts for Malinsilva\_74:

(Start: 3 @42433 has 110 MA's), (Start: 5 @42415 has 8 MA's), (Start: 7 @42400 has 1 MA's), (Start: 9 @42379 has 3 MA's), (12, 42346), (13, 42295), (15, 42286), (16, 42259), (17, 42253), (20, 42220),

Gene: Manu\_71 Start: 42258, Stop: 41950, Start Num: 3

Candidate Starts for Manu\_71:

(Start: 3 @42258 has 110 MA's), (Start: 5 @42240 has 8 MA's), (Start: 7 @42225 has 1 MA's), (Start: 9 @42204 has 3 MA's), (12, 42171), (13, 42120), (15, 42111), (16, 42084), (17, 42078), (18, 42069), (20, 42045),

Gene: MarQuardt\_72 Start: 42443, Stop: 42135, Start Num: 3

Candidate Starts for MarQuardt\_72:

(Start: 3 @42443 has 110 MA's), (Start: 5 @42425 has 8 MA's), (Start: 7 @42410 has 1 MA's), (Start: 9 @42389 has 3 MA's), (12, 42356), (13, 42305), (15, 42296), (16, 42269), (17, 42263), (20, 42230),

Gene: Marchesa\_65 Start: 42037, Stop: 41729, Start Num: 9

Candidate Starts for Marchesa\_65:

(Start: 3 @42094 has 110 MA's), (6, 42073), (Start: 7 @42061 has 1 MA's), (Start: 9 @42037 has 3 MA's), (19, 41887), (20, 41869), (21, 41860), (22, 41848),

Gene: Margo\_67 Start: 42186, Stop: 41815, Start Num: 3

Candidate Starts for Margo\_67:

(Start: 3 @42186 has 110 MA's), (Start: 7 @42153 has 1 MA's), (Start: 9 @42129 has 3 MA's), (13, 42033), (19, 41976), (20, 41958), (22, 41937),

Gene: Marie\_70 Start: 42441, Stop: 42133, Start Num: 3

Candidate Starts for Marie\_70:

(Start: 3 @42441 has 110 MA's), (Start: 5 @42423 has 8 MA's), (Start: 7 @42408 has 1 MA's), (Start: 9 @42387 has 3 MA's), (12, 42354), (13, 42303), (15, 42294), (16, 42267), (17, 42261), (20, 42228),

Gene: Marius\_72 Start: 42255, Stop: 41947, Start Num: 3

Candidate Starts for Marius\_72:

(Start: 3 @42255 has 110 MA's), (Start: 5 @42237 has 8 MA's), (Start: 7 @42222 has 1 MA's), (Start: 9 @42201 has 3 MA's), (12, 42168), (13, 42117), (15, 42108), (16, 42081), (17, 42075), (20, 42042),

Gene: Methuselah\_65 Start: 42465, Stop: 42157, Start Num: 3

Candidate Starts for Methuselah\_65:

(Start: 3 @42465 has 110 MA's), (Start: 5 @42447 has 8 MA's), (Start: 7 @42432 has 1 MA's), (Start: 9 @42411 has 3 MA's), (12, 42378), (13, 42327), (15, 42318), (16, 42291), (17, 42285), (20, 42252),

Gene: Microwolf\_68 Start: 42457, Stop: 42149, Start Num: 3

Candidate Starts for Microwolf\_68:

(Start: 3 @42457 has 110 MA's), (Start: 5 @42439 has 8 MA's), (Start: 7 @42424 has 1 MA's), (Start: 9 @42403 has 3 MA's), (12, 42370), (13, 42319), (15, 42310), (16, 42283), (17, 42277), (20, 42244),

Gene: Misomonster\_73 Start: 42468, Stop: 42160, Start Num: 3

Candidate Starts for Misomonster\_73:

(1, 42675), (Start: 3 @42468 has 110 MA's), (4, 42456), (Start: 5 @42450 has 8 MA's), (Start: 7 @42435 has 1 MA's), (Start: 9 @42414 has 3 MA's), (12, 42381), (13, 42330), (15, 42321), (16, 42294), (17, 42288), (20, 42255),

Gene: MoneyMay\_71 Start: 42441, Stop: 42133, Start Num: 3

Candidate Starts for MoneyMay\_71:

(Start: 3 @42441 has 110 MA's), (Start: 5 @42423 has 8 MA's), (Start: 7 @42408 has 1 MA's), (Start: 9 @42387 has 3 MA's), (12, 42354), (13, 42303), (15, 42294), (16, 42267), (17, 42261), (20, 42228),

Gene: MuchMore\_75 Start: 42433, Stop: 42125, Start Num: 3

Candidate Starts for MuchMore\_75:

(Start: 3 @42433 has 110 MA's), (Start: 5 @42415 has 8 MA's), (Start: 7 @42400 has 1 MA's), (Start: 9 @42379 has 3 MA's), (12, 42346), (13, 42295), (15, 42286), (16, 42259), (17, 42253), (20, 42220),

Gene: Noella\_67 Start: 42161, Stop: 41790, Start Num: 3

Candidate Starts for Noella\_67:

(Start: 3 @42161 has 110 MA's), (Start: 7 @42128 has 1 MA's), (Start: 9 @42104 has 3 MA's), (13, 42008), (19, 41951), (20, 41933), (22, 41912),

Gene: Norbert\_63 Start: 42160, Stop: 41789, Start Num: 3

Candidate Starts for Norbert\_63:

(Start: 3 @42160 has 110 MA's), (Start: 7 @42127 has 1 MA's), (Start: 9 @42103 has 3 MA's), (13, 42007), (19, 41950), (20, 41932), (22, 41911),

Gene: OKCentral2016\_63 Start: 40871, Stop: 40563, Start Num: 3

Candidate Starts for OKCentral2016\_63:

(Start: 3 @40871 has 110 MA's), (8, 40829), (10, 40805), (18, 40682), (20, 40658), (23, 40583),

Gene: OlanP\_70 Start: 42431, Stop: 42123, Start Num: 3

Candidate Starts for OlanP\_70:

(Start: 3 @42431 has 110 MA's), (Start: 5 @42413 has 8 MA's), (Start: 7 @42398 has 1 MA's), (Start: 9 @42377 has 3 MA's), (12, 42344), (13, 42293), (15, 42284), (16, 42257), (17, 42251), (18, 42242), (20, 42218),

Gene: Ollie\_72 Start: 42312, Stop: 42004, Start Num: 3

Candidate Starts for Ollie\_72:

(Start: 3 @42312 has 110 MA's), (Start: 5 @42294 has 8 MA's), (Start: 7 @42279 has 1 MA's), (Start: 9 @42258 has 3 MA's), (12, 42225), (13, 42174), (15, 42165), (16, 42138), (17, 42132), (20, 42099),

Gene: P28Green\_72 Start: 42444, Stop: 42136, Start Num: 3

Candidate Starts for P28Green\_72:

(Start: 3 @42444 has 110 MA's), (Start: 5 @42426 has 8 MA's), (Start: 7 @42411 has 1 MA's), (Start: 9 @42390 has 3 MA's), (12, 42357), (13, 42306), (15, 42297), (16, 42270), (17, 42264), (20, 42231),

Gene: PGHhamlin\_74 Start: 42433, Stop: 42125, Start Num: 3

Candidate Starts for PGHhamlin\_74:

(Start: 3 @42433 has 110 MA's), (Start: 5 @42415 has 8 MA's), (Start: 7 @42400 has 1 MA's), (Start: 9 @42379 has 3 MA's), (12, 42346), (13, 42295), (15, 42286), (16, 42259), (17, 42253), (20, 42220),

Gene: Panamaxus\_65 Start: 42160, Stop: 41789, Start Num: 3

Candidate Starts for Panamaxus\_65:

(Start: 3 @42160 has 110 MA's), (Start: 7 @42127 has 1 MA's), (Start: 9 @42103 has 3 MA's), (13, 42007), (19, 41950), (20, 41932), (22, 41911),

Gene: PeaceMeal1\_62 Start: 40396, Stop: 40088, Start Num: 3

Candidate Starts for PeaceMeal1\_62:

(Start: 3 @40396 has 110 MA's), (8, 40354), (10, 40330), (13, 40258), (18, 40207), (20, 40183), (23, 40108),

Gene: Pembroke\_72 Start: 42442, Stop: 42134, Start Num: 3

Candidate Starts for Pembroke\_72:

(Start: 3 @42442 has 110 MA's), (Start: 5 @42424 has 8 MA's), (Start: 7 @42409 has 1 MA's), (Start: 9 @42388 has 3 MA's), (12, 42355), (13, 42304), (15, 42295), (16, 42268), (17, 42262), (20, 42229),

Gene: Penny1\_72 Start: 42445, Stop: 42137, Start Num: 3

Candidate Starts for Penny1\_72:

(Start: 3 @42445 has 110 MA's), (Start: 5 @42427 has 8 MA's), (Start: 7 @42412 has 1 MA's), (Start: 9 @42391 has 3 MA's), (12, 42358), (13, 42307), (15, 42298), (16, 42271), (17, 42265), (20, 42232),

Gene: Phantastic\_69 Start: 41822, Stop: 41451, Start Num: 3

Candidate Starts for Phantastic\_69:

(Start: 3 @41822 has 110 MA's), (6, 41801), (Start: 7 @41789 has 1 MA's), (Start: 9 @41765 has 3 MA's), (19, 41612), (20, 41594), (21, 41585), (22, 41573),

Gene: PhishRPhriends\_68 Start: 41439, Stop: 41131, Start Num: 3

Candidate Starts for PhishRPhriends\_68:

(Start: 3 @41439 has 110 MA's), (Start: 5 @41421 has 8 MA's), (Start: 7 @41406 has 1 MA's), (Start: 9 @41385 has 3 MA's), (12, 41352), (13, 41301), (15, 41292), (16, 41265), (17, 41259), (18, 41250), (20, 41226),

Gene: Phoxy\_72 Start: 42466, Stop: 42158, Start Num: 3

Candidate Starts for Phoxy\_72:

(Start: 3 @42466 has 110 MA's), (Start: 5 @42448 has 8 MA's), (Start: 7 @42433 has 1 MA's), (Start: 9 @42412 has 3 MA's), (12, 42379), (13, 42328), (15, 42319), (16, 42292), (17, 42286), (20, 42253),

Gene: Pistachio\_67 Start: 41751, Stop: 41383, Start Num: 3

Candidate Starts for Pistachio\_67:

(Start: 3 @41751 has 110 MA's), (6, 41730), (Start: 7 @41718 has 1 MA's), (Start: 9 @41694 has 3 MA's), (19, 41544), (20, 41526), (22, 41505),

Gene: Pocahontas\_66 Start: 42157, Stop: 41786, Start Num: 3

Candidate Starts for Pocahontas\_66:

(Start: 3 @42157 has 110 MA's), (Start: 7 @42124 has 1 MA's), (Start: 9 @42100 has 3 MA's), (13, 42004), (19, 41947), (20, 41929), (22, 41908),

Gene: Poompha\_61 Start: 40394, Stop: 40086, Start Num: 3

Candidate Starts for Poompha\_61:

(Start: 3 @40394 has 110 MA's), (8, 40352), (10, 40328), (13, 40256), (18, 40205), (20, 40181), (23, 40106),

Gene: Popcicle\_67 Start: 42157, Stop: 41786, Start Num: 3

Candidate Starts for Popcicle\_67:

(Start: 3 @42157 has 110 MA's), (Start: 7 @42124 has 1 MA's), (Start: 9 @42100 has 3 MA's), (13, 42004), (19, 41947), (20, 41929), (22, 41908),

Gene: PotatoSplit\_73 Start: 42445, Stop: 42137, Start Num: 3

Candidate Starts for PotatoSplit\_73:

(Start: 3 @42445 has 110 MA's), (Start: 5 @42427 has 8 MA's), (Start: 7 @42412 has 1 MA's), (Start: 9 @42391 has 3 MA's), (12, 42358), (13, 42307), (15, 42298), (16, 42271), (17, 42265), (20, 42232),

Gene: Puppy\_68 Start: 41766, Stop: 41455, Start Num: 9

Candidate Starts for Puppy\_68:

(Start: 3 @41823 has 110 MA's), (6, 41802), (Start: 7 @41790 has 1 MA's), (Start: 9 @41766 has 3 MA's), (19, 41616), (20, 41598), (22, 41577),

Gene: PurpleHaze\_71 Start: 42257, Stop: 41949, Start Num: 3

Candidate Starts for PurpleHaze\_71:

(Start: 3 @42257 has 110 MA's), (Start: 5 @42239 has 8 MA's), (Start: 7 @42224 has 1 MA's), (Start: 9 @42203 has 3 MA's), (12, 42170), (13, 42119), (15, 42110), (16, 42083), (17, 42077), (20, 42044),

Gene: QuinnKiro\_66 Start: 42160, Stop: 41789, Start Num: 3

Candidate Starts for QuinnKiro\_66:

(Start: 3 @42160 has 110 MA's), (Start: 7 @42127 has 1 MA's), (Start: 9 @42103 has 3 MA's), (13, 42007), (19, 41950), (20, 41932), (22, 41911),

Gene: Rebeuca\_65 Start: 41710, Stop: 41402, Start Num: 3

Candidate Starts for Rebeuca\_65:

(Start: 3 @41710 has 110 MA's), (6, 41692), (8, 41668), (10, 41644), (18, 41521), (20, 41497), (23, 41422),

Gene: ResDef\_65 Start: 42160, Stop: 41789, Start Num: 3

Candidate Starts for ResDef\_65:

(Start: 3 @42160 has 110 MA's), (Start: 7 @42127 has 1 MA's), (Start: 9 @42103 has 3 MA's), (13, 42007), (19, 41950), (20, 41932), (22, 41911),

Gene: RhynO\_64 Start: 41351, Stop: 41043, Start Num: 3

Candidate Starts for RhynO\_64:

(Start: 3 @41351 has 110 MA's), (8, 41309), (10, 41285), (19, 41156), (20, 41138), (23, 41063),

Gene: Rockstar\_66 Start: 41645, Stop: 41277, Start Num: 3

Candidate Starts for Rockstar\_66:

(Start: 3 @41645 has 110 MA's), (Start: 7 @41612 has 1 MA's), (Start: 9 @41588 has 3 MA's), (19, 41438), (20, 41420), (21, 41411), (22, 41399),

Gene: Rowdy\_66 Start: 41423, Stop: 41115, Start Num: 3

Candidate Starts for Rowdy\_66:

(Start: 3 @41423 has 110 MA's), (8, 41381), (10, 41357), (13, 41285), (19, 41228), (20, 41210), (23, 41135),

Gene: Rummer\_71 Start: 42469, Stop: 42161, Start Num: 3

Candidate Starts for Rummer\_71:

(Start: 3 @42469 has 110 MA's), (Start: 5 @42451 has 8 MA's), (Start: 7 @42436 has 1 MA's), (Start: 9 @42415 has 3 MA's), (12, 42382), (13, 42331), (15, 42322), (16, 42295), (17, 42289), (20, 42256),

Gene: Sabia\_70 Start: 42432, Stop: 42142, Start Num: 5

Candidate Starts for Sabia\_70:

(Start: 5 @42432 has 8 MA's), (Start: 7 @42417 has 1 MA's), (Start: 9 @42396 has 3 MA's), (12, 42363), (13, 42312), (15, 42303), (16, 42276), (17, 42270), (20, 42237),

Gene: Sabinator\_70 Start: 42440, Stop: 42132, Start Num: 3

Candidate Starts for Sabinator\_70:

(Start: 3 @42440 has 110 MA's), (Start: 5 @42422 has 8 MA's), (Start: 7 @42407 has 1 MA's), (Start: 9 @42386 has 3 MA's), (12, 42353), (13, 42302), (15, 42293), (16, 42266), (17, 42260), (20, 42227),

Gene: Sanya\_62 Start: 43541, Stop: 43293, Start Num: 9

Candidate Starts for Sanya\_62:

(2, 43613), (Start: 3 @43586 has 110 MA's), (Start: 9 @43541 has 3 MA's), (11, 43511), (13, 43463), (17, 43421),

Gene: SaturnRing\_67 Start: 42204, Stop: 41836, Start Num: 3

Candidate Starts for SaturnRing\_67:

(Start: 3 @42204 has 110 MA's), (6, 42183), (Start: 7 @42171 has 1 MA's), (Start: 9 @42147 has 3 MA's), (19, 41997), (20, 41979), (22, 41958),

Gene: Scout\_66 Start: 41355, Stop: 40990, Start Num: 3

Candidate Starts for Scout\_66:

(Start: 3 @41355 has 110 MA's), (6, 41334), (Start: 7 @41322 has 1 MA's), (Start: 9 @41298 has 3 MA's), (19, 41148), (20, 41130), (21, 41121), (22, 41109),

Gene: Severus\_62 Start: 40394, Stop: 40086, Start Num: 3

Candidate Starts for Severus\_62:

(Start: 3 @40394 has 110 MA's), (8, 40352), (10, 40328), (13, 40256), (18, 40205), (20, 40181), (23, 40106),

Gene: Shapes\_66 Start: 41423, Stop: 41115, Start Num: 3

Candidate Starts for Shapes\_66:

(Start: 3 @41423 has 110 MA's), (8, 41381), (10, 41357), (13, 41285), (19, 41228), (20, 41210), (23, 41135),

Gene: Sheen\_69 Start: 45854, Stop: 45495, Start Num: 3

Candidate Starts for Sheen\_69:

(Start: 3 @45854 has 110 MA's), (8, 45818), (13, 45713), (19, 45656), (20, 45638), (22, 45617),

Gene: Snickers\_68 Start: 42397, Stop: 42107, Start Num: 5

Candidate Starts for Snickers\_68:

(Start: 5 @42397 has 8 MA's), (Start: 7 @42382 has 1 MA's), (Start: 9 @42361 has 3 MA's), (12, 42328), (13, 42277), (15, 42268), (16, 42241), (17, 42235), (20, 42202),

Gene: SoYo\_69 Start: 42353, Stop: 42045, Start Num: 3

Candidate Starts for SoYo\_69:

(Start: 3 @42353 has 110 MA's), (Start: 5 @42335 has 8 MA's), (Start: 7 @42320 has 1 MA's), (Start: 9 @42299 has 3 MA's), (12, 42266), (13, 42215), (15, 42206), (16, 42179), (17, 42173), (20, 42140),

Gene: SoilDragon\_71 Start: 41889, Stop: 41581, Start Num: 3



Candidate Starts for SoilDragon\_71:

(Start: 3 @41889 has 110 MA's), (Start: 5 @41871 has 8 MA's), (Start: 7 @41856 has 1 MA's), (Start: 9 @41835 has 3 MA's), (12, 41802), (13, 41751), (15, 41742), (16, 41715), (17, 41709), (18, 41700), (20, 41676),

Gene: Soshari\_74 Start: 42465, Stop: 42157, Start Num: 3

Candidate Starts for Soshari\_74:

(Start: 3 @42465 has 110 MA's), (Start: 5 @42447 has 8 MA's), (Start: 7 @42432 has 1 MA's), (Start: 9 @42411 has 3 MA's), (12, 42378), (13, 42327), (15, 42318), (16, 42291), (17, 42285), (20, 42252),

Gene: Spike509\_72 Start: 42466, Stop: 42158, Start Num: 3

Candidate Starts for Spike509\_72:

(Start: 3 @42466 has 110 MA's), (Start: 5 @42448 has 8 MA's), (Start: 7 @42433 has 1 MA's), (Start: 9 @42412 has 3 MA's), (12, 42379), (13, 42328), (15, 42319), (16, 42292), (17, 42286), (20, 42253),

Gene: StepMih\_71 Start: 42435, Stop: 42127, Start Num: 3

Candidate Starts for StepMih\_71:

(Start: 3 @42435 has 110 MA's), (Start: 5 @42417 has 8 MA's), (Start: 7 @42402 has 1 MA's), (Start: 9 @42381 has 3 MA's), (12, 42348), (13, 42297), (15, 42288), (16, 42261), (17, 42255), (20, 42222),

Gene: TNguyen7\_68 Start: 42107, Stop: 41796, Start Num: 9

Candidate Starts for TNguyen7\_68:

(Start: 3 @42164 has 110 MA's), (6, 42143), (Start: 7 @42131 has 1 MA's), (Start: 9 @42107 has 3 MA's), (19, 41957), (20, 41939), (22, 41918),

Gene: Taurus\_73 Start: 42441, Stop: 42133, Start Num: 3

Candidate Starts for Taurus\_73:

(Start: 3 @42441 has 110 MA's), (Start: 5 @42423 has 8 MA's), (Start: 7 @42408 has 1 MA's), (Start: 9 @42387 has 3 MA's), (12, 42354), (13, 42303), (15, 42294), (16, 42267), (17, 42261), (20, 42228),

Gene: Texage\_65 Start: 42161, Stop: 41790, Start Num: 3

Candidate Starts for Texage\_65:

(Start: 3 @42161 has 110 MA's), (Start: 7 @42128 has 1 MA's), (Start: 9 @42104 has 3 MA's), (13, 42008), (19, 41951), (20, 41933), (22, 41912),

Gene: Tiffany\_71 Start: 42309, Stop: 42019, Start Num: 5

Candidate Starts for Tiffany\_71:

(Start: 5 @42309 has 8 MA's), (Start: 7 @42294 has 1 MA's), (Start: 9 @42273 has 3 MA's), (12, 42240), (13, 42189), (15, 42180), (16, 42153), (17, 42147), (20, 42114),

Gene: Todacoro\_67 Start: 42160, Stop: 41789, Start Num: 3

Candidate Starts for Todacoro\_67:

(Start: 3 @42160 has 110 MA's), (Start: 7 @42127 has 1 MA's), (Start: 9 @42103 has 3 MA's), (13, 42007), (19, 41950), (20, 41932), (22, 41911),

Gene: Topanga\_61 Start: 41190, Stop: 40882, Start Num: 3

Candidate Starts for Topanga\_61:

(Start: 3 @41190 has 110 MA's), (8, 41148), (10, 41124), (18, 41001), (19, 40995), (20, 40977), (23, 40902),

Gene: Toro\_68 Start: 45930, Stop: 45607, Start Num: 8

Candidate Starts for Toro\_68:

(Start: 3 @45966 has 110 MA's), (8, 45930), (13, 45825), (19, 45768), (20, 45750), (22, 45729),

Gene: Trike\_61 Start: 40401, Stop: 40093, Start Num: 3

Candidate Starts for Trike\_61:

(Start: 3 @40401 has 110 MA's), (8, 40359), (10, 40335), (13, 40263), (18, 40212), (20, 40188), (23, 40113),

Gene: Twister\_63 Start: 41311, Stop: 41003, Start Num: 3

Candidate Starts for Twister\_63:

(Start: 3 @41311 has 110 MA's), (8, 41269), (10, 41245), (18, 41122), (19, 41116), (20, 41098), (23, 41023),

Gene: Veracruz\_64 Start: 42160, Stop: 41789, Start Num: 3

Candidate Starts for Veracruz\_64:

(Start: 3 @42160 has 110 MA's), (Start: 7 @42127 has 1 MA's), (Start: 9 @42103 has 3 MA's), (13, 42007), (19, 41950), (20, 41932), (22, 41911),

Gene: Vix\_68 Start: 42524, Stop: 42216, Start Num: 3

Candidate Starts for Vix\_68:

(Start: 3 @42524 has 110 MA's), (Start: 5 @42506 has 8 MA's), (Start: 7 @42491 has 1 MA's), (Start: 9 @42470 has 3 MA's), (12, 42437), (13, 42386), (15, 42377), (16, 42350), (17, 42344), (20, 42311),

Gene: WalterMcMickey\_63 Start: 41311, Stop: 41003, Start Num: 3

Candidate Starts for WalterMcMickey\_63:

(Start: 3 @41311 has 110 MA's), (8, 41269), (10, 41245), (18, 41122), (19, 41116), (20, 41098), (23, 41023),

Gene: Watson\_71 Start: 42433, Stop: 42125, Start Num: 3

Candidate Starts for Watson\_71:

(Start: 3 @42433 has 110 MA's), (Start: 5 @42415 has 8 MA's), (Start: 7 @42400 has 1 MA's), (Start: 9 @42379 has 3 MA's), (12, 42346), (13, 42295), (15, 42286), (16, 42259), (17, 42253), (20, 42220),

Gene: Wooldri\_74 Start: 42353, Stop: 42045, Start Num: 3

Candidate Starts for Wooldri\_74:

(Start: 3 @42353 has 110 MA's), (Start: 5 @42335 has 8 MA's), (Start: 7 @42320 has 1 MA's), (Start: 9 @42299 has 3 MA's), (12, 42266), (13, 42215), (15, 42206), (16, 42179), (17, 42173), (20, 42140),

Gene: Zetzy\_69 Start: 42004, Stop: 41696, Start Num: 3

Candidate Starts for Zetzy\_69:

(Start: 3 @42004 has 110 MA's), (Start: 5 @41986 has 8 MA's), (Start: 7 @41971 has 1 MA's), (Start: 9 @41950 has 3 MA's), (12, 41917), (13, 41866), (15, 41857), (16, 41830), (17, 41824), (20, 41791),