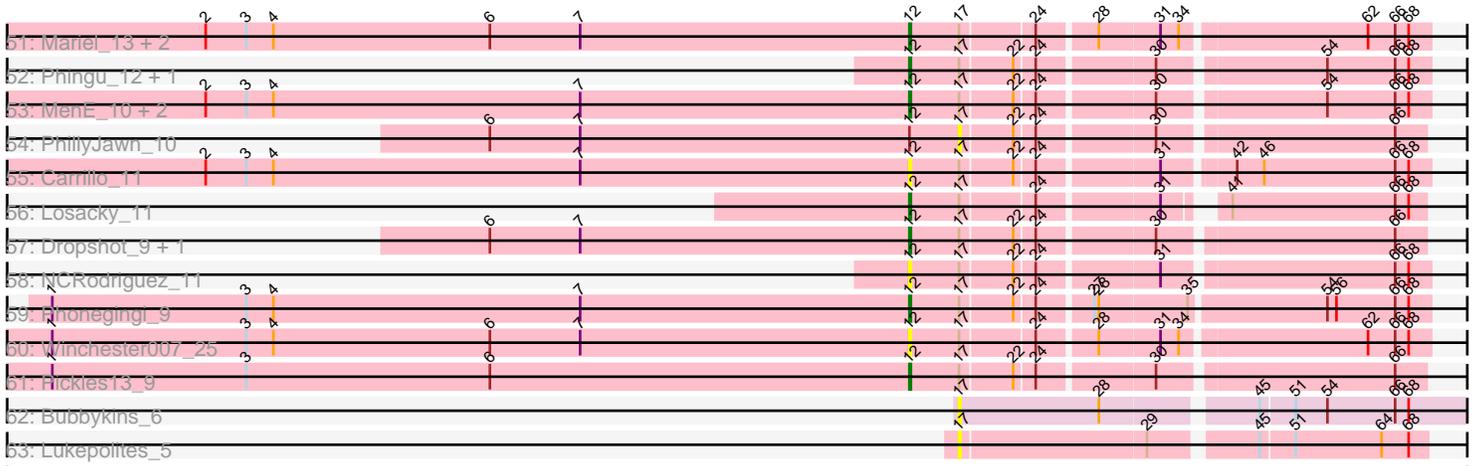


Pham 283566



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 283566 Report

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

Pham number 283566 has 148 members, 28 are drafts.

Phages represented in each track:

- Track 1 : Mabel\_3, Aneem\_3, Munch\_3, Gilberta\_3, Salz\_3, Wolpertinger\_3, Bachome\_3, MaCh\_3, Lucivia\_3, Sham4\_3, Snape\_3, Jabith\_3, Joselito\_3, Flaverint\_3, TinyTimmy\_3, Hutc2\_3, Kimba\_3, Petersenfast\_3, Et2Brutus\_3, Bowtie\_3, Insomnia\_3, Fibonacci\_3, Ebony\_3, Timothy\_3
- Track 2 : Mulciber\_3
- Track 3 : Saskia\_3, Orange\_3
- Track 4 : Bud\_3
- Track 5 : Luchador\_3
- Track 6 : SororFago\_3
- Track 7 : Sunhee\_3
- Track 8 : Gail\_3
- Track 9 : Jeeves\_3
- Track 10 : Fameo\_4, Heffalump\_4, QueenB2\_4
- Track 11 : Terrific\_5, Piro94\_3, NaSiaTalie\_4, Flare16\_4, Centaur\_4, Drake55\_4, MiculUcigas\_4, WideWale\_4, HarryHoudini\_4, Equemioh13\_4, Gratitude\_4, Sknot\_4, Updawg\_4, Baehexic\_4
- Track 12 : HippoHollow\_3, LionsBait\_3
- Track 13 : Dalmatian\_4, Retro23\_4, Anselm\_4, DudeLittle\_4
- Track 14 : Echild\_4
- Track 15 : Benvolio\_4
- Track 16 : Nergal\_8
- Track 17 : EastWest\_5
- Track 18 : Beans\_5
- Track 19 : Brent\_5, Jawnski\_5, King2\_5, Franzy\_5
- Track 20 : NathanVaag\_5, Piccoletto\_5
- Track 21 : BarretLemon\_5, BigDome\_5, Timinator\_5, StevieBAY\_5, LeeroyJ\_5
- Track 22 : Wyborn\_5
- Track 23 : GravityBall\_5
- Track 24 : JKerns\_5, Jordan\_5, BossLady\_5, Zartrosa\_5, Sonny\_5, Shade\_5
- Track 25 : TaeYoung\_5, Martha\_5, Grekaycon\_5
- Track 26 : Pippa\_5
- Track 27 : Sicarius2\_5
- Track 28 : Abba\_5
- Track 29 : Nostromo\_5
- Track 30 : DrYang\_6
- Track 31 : MoyaNatalis\_6, JayCookie\_6, Linus\_6, PrincessTrina\_6
- Track 32 : ArV1\_004

- Track 33 : Colucci\_6
- Track 34 : Tophat\_6, Chipper1996\_60, EdgarPoe\_6, Conboy\_6
- Track 35 : Scavito\_6, JaNo\_6, Chubster\_6, HumptyDumpty\_6, RosiePosie\_6, Mordred\_6, Kabreeze\_6, Chocolat\_6
- Track 36 : Lymara\_6
- Track 37 : KBurrousTX\_6
- Track 38 : Mabodamaca\_5
- Track 39 : GardenState\_5
- Track 40 : CalWood4100\_5, Lilmac1015\_5, Bolt007\_5, Prairie\_5
- Track 41 : Circuit\_5
- Track 42 : Altadena\_5
- Track 43 : Klevey\_5
- Track 44 : Nandito\_5
- Track 45 : Bumble\_5
- Track 46 : GoldDust\_7, Gooberta\_7, Music\_7, Hirko\_6, Vibaki\_7
- Track 47 : Vitus\_7
- Track 48 : BlackJade\_7
- Track 49 : Warren\_10
- Track 50 : CookieDog\_10, Bush\_10
- Track 51 : Mariel\_13, Antuna\_10, Guzman\_11
- Track 52 : Phingu\_12, Blett\_10
- Track 53 : MenE\_10, Jakelyne\_12, Violeta\_11
- Track 54 : PhillyJawn\_10
- Track 55 : Carrillo\_11
- Track 56 : Losacky\_11
- Track 57 : Dropshot\_9, Appa\_9
- Track 58 : NCRodriguez\_11
- Track 59 : Phonegingi\_9
- Track 60 : Winchester007\_25
- Track 61 : Pickles13\_9
- Track 62 : Bubbykins\_6
- Track 63 : Lukepolites\_5

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

The start number called the most often in the published annotations is 17, it was called in 63 of the 120 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Altadena\_5, Aneem\_3, ArV1\_004, Bachome\_3, Beans\_5, Bolt007\_5, Bowtie\_3, Brent\_5, Bubbykins\_6, Bud\_3, Bumble\_5, CalWood4100\_5, Chipper1996\_60, Chocolat\_6, Chubster\_6, Colucci\_6, Conboy\_6, DrYang\_6, Ebony\_3, EdgarPoe\_6, Et2Brutus\_3, Fibonacci\_3, Flaverint\_3, Franzy\_5, Gail\_3, Gilberta\_3, HumptyDumpty\_6, Hutc2\_3, Insomnia\_3, JaNo\_6, Jabith\_3, Jawnski\_5, JayCookie\_6, Jeeves\_3, Joselito\_3, KBurrousTX\_6, Kabreeze\_6, Kimba\_3, King2\_5, Klevey\_5, Lilmac1015\_5, Linus\_6, Lucivia\_3, Lukepolites\_5, Lymara\_6, MaCh\_3, Mabel\_3, Mordred\_6, MoyaNatalis\_6, Munch\_3, Nandito\_5, NathanVaag\_5, Nergal\_8, Nostromo\_5, Orange\_3, Petersenfast\_3, PhillyJawn\_10, Piccoletto\_5, Prairie\_5, PrincessTrina\_6, RosiePosie\_6, Salz\_3, Saskia\_3, Scavito\_6, Sham4\_3, Sicarius2\_5, Snape\_3, SororFago\_3, Sunhee\_3, Timothy\_3, TinyTimmy\_3,

Tophat\_6, Vitus\_7, Wolpertinger\_3, Wyborn\_5,

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

- Antuna\_10, Appa\_9, Blett\_10, Bush\_10, Carrillo\_11, Circuit\_5, CookieDog\_10, Dropshot\_9, Guzman\_11, Jakelyne\_12, Losacky\_11, Mariel\_13, MenE\_10, Mulciber\_3, NCRodriguez\_11, Phingu\_12, Phonegingi\_9, Pickles13\_9, Violeta\_11, Warren\_10, Winchester007\_25,

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

- Abba\_5, Anselm\_4, Baehexic\_4, BarretLemon\_5, Benvolio\_4, BigDome\_5, BlackJade\_7, BossLady\_5, Centaur\_4, Dalmatian\_4, Drake55\_4, DudeLittle\_4, EastWest\_5, Echild\_4, Equemioh13\_4, Fameo\_4, Flare16\_4, GardenState\_5, GoldDust\_7, Gooberta\_7, Gratitude\_4, GravityBall\_5, Grekaycon\_5, HarryHoudini\_4, Heffalump\_4, HippoHollow\_3, Hirko\_6, JKerns\_5, Jordan\_5, LeeroyJ\_5, LionsBait\_3, Luchador\_3, Mabodamaca\_5, Martha\_5, MiculUcigas\_4, Music\_7, NaSiaTalie\_4, Pippa\_5, Piro94\_3, QueenB2\_4, Retro23\_4, Shade\_5, Sknot\_4, Sonny\_5, StevieBAY\_5, TaeYoung\_5, Terrific\_5, Timinator\_5, Updawg\_4, Vibaki\_7, WideWale\_4, Zartrosa\_5,

### Summary by start number:

Start 12:

- Found in 20 of 148 ( 13.5% ) of genes in pham
- Manual Annotations of this start: 11 of 120
- Called 95.0% of time when present
- Phage (with cluster) where this start called: Antuna\_10 (GA), Appa\_9 (GA), Blett\_10 (GA), Bush\_10 (GA), Carrillo\_11 (GA), CookieDog\_10 (GA), Dropshot\_9 (GA), Guzman\_11 (GA), Jakelyne\_12 (GA), Losacky\_11 (GA), Mariel\_13 (GA), MenE\_10 (GA), NCRodriguez\_11 (GA), Phingu\_12 (GA), Phonegingi\_9 (GA), Pickles13\_9 (GA), Violeta\_11 (GA), Warren\_10 (GA), Winchester007\_25 (GA),

Start 13:

- Found in 58 of 148 ( 39.2% ) of genes in pham
- Manual Annotations of this start: 3 of 120
- Called 5.2% of time when present
- Phage (with cluster) where this start called: Echild\_4 (A2), Luchador\_3 (A14), Mulciber\_3 (A11),

Start 14:

- Found in 1 of 148 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlackJade\_7 (FL),

Start 15:

- Found in 6 of 148 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 4 of 120
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abba\_5 (AO3), GoldDust\_7 (FL), Gooberta\_7 (FL), Hirko\_6 (FL), Music\_7 (FL), Vibaki\_7 (FL),

Start 17:

- Found in 96 of 148 ( 64.9% ) of genes in pham

- Manual Annotations of this start: 63 of 120
- Called 78.1% of time when present
- Phage (with cluster) where this start called: Altadena\_5 (FH), Aneem\_3 (A11), ArV1\_004 (AR), Bachome\_3 (A11), Beans\_5 (AO1), Bolt007\_5 (FH), Bowtie\_3 (A11), Brent\_5 (AO1), Bubbykins\_6 (UNK), Bud\_3 (A11), Bumble\_5 (FH), CalWood4100\_5 (FH), Chipper1996\_60 (AR), Chocolat\_6 (AR), Chubster\_6 (AR), Colucci\_6 (AR), Conboy\_6 (AR), DrYang\_6 (AR), Ebony\_3 (A11), EdgarPoe\_6 (AR), Et2Brutus\_3 (A11), Fibonacci\_3 (A11), Flaverint\_3 (A11), Franzy\_5 (AO1), Gail\_3 (A14), Gilberta\_3 (A11), HumptyDumpty\_6 (AR), Hutc2\_3 (A11), Insomnia\_3 (A11), JaNo\_6 (AR), Jabith\_3 (A11), Jawnski\_5 (AO1), JayCookie\_6 (AR), Jeeves\_3 (A14), Joselito\_3 (A11), KBurroustX\_6 (AR), Kabreeze\_6 (AR), Kimba\_3 (A11), King2\_5 (AO1), Klevey\_5 (FH), Lilmac1015\_5 (FH), Linus\_6 (AR), Lucivia\_3 (A11), Lukepolites\_5 (singleton), Lymara\_6 (AR), MaCh\_3 (A11), Mabel\_3 (A11), Mordred\_6 (AR), MoyaNatalis\_6 (AR), Munch\_3 (A11), Nandito\_5 (FH), NathanVaag\_5 (AO1), Nergal\_8 (AG), Nostromo\_5 (AO3), Orange\_3 (A11), Petersenfast\_3 (A11), PhillyJawn\_10 (GA), Piccoletto\_5 (AO1), Prairie\_5 (FH), PrincessTrina\_6 (AR), RosiePosie\_6 (AR), Salz\_3 (A11), Saskia\_3 (A11), Scavito\_6 (AR), Sham4\_3 (A11), Sicarius2\_5 (AO2), Snape\_3 (A11), SororFago\_3 (A14), Sunhee\_3 (A14), Timothy\_3 (A11), TinyTimmy\_3 (A11), Tophat\_6 (AR), Vitus\_7 (FL), Wolpertinger\_3 (A11), Wyborn\_5 (AO2),

#### Start 18:

- Found in 48 of 148 ( 32.4% ) of genes in pham
- Manual Annotations of this start: 38 of 120
- Called 89.6% of time when present
- Phage (with cluster) where this start called: Anselm\_4 (A2), Baehexic\_4 (A2), BarretLemon\_5 (AO2), Benvolio\_4 (A2), BigDome\_5 (AO2), BossLady\_5 (AO2), Centaur\_4 (A2), Circuit\_5 (FH), Dalmatian\_4 (A2), Drake55\_4 (A2), DudeLittle\_4 (A2), EastWest\_5 (AO), Equemioh13\_4 (A2), Fameo\_4 (A2), Flare16\_4 (A2), GardenState\_5 (EH), Gratitude\_4 (A2), Grekaycon\_5 (AO2), HarryHoudini\_4 (A2), Heffalump\_4 (A2), HippoHollow\_3 (A2), JKerns\_5 (AO2), Jordan\_5 (AO2), LeeroyJ\_5 (AO2), LionsBait\_3 (A2), Mabodamaca\_5 (EH), Martha\_5 (AO2), MiculUcigas\_4 (A2), NaSiaTalie\_4 (A2), Pippa\_5 (AO2), Piro94\_3 (A2), QueenB2\_4 (A2), Retro23\_4 (A2), Shade\_5 (AO2), Sknot\_4 (A2), Sonny\_5 (AO2), StevieBAY\_5 (AO2), TaeYoung\_5 (AO2), Terrific\_5 (A2), Timinator\_5 (AO2), Updawg\_4 (A2), WideWale\_4 (A2), Zartrosa\_5 (AO2),

#### Start 19:

- Found in 15 of 148 ( 10.1% ) of genes in pham
- Manual Annotations of this start: 1 of 120
- Called 6.7% of time when present
- Phage (with cluster) where this start called: GravityBall\_5 (AO2),

### Summary by clusters:

There are 15 clusters represented in this pham: A14, singleton, A11, EH, AG, AO1, AO, AR, AO3, AO2, GA, FH, UNK, FL, A2,

#### Info for manual annotations of cluster A11:

- Start number 13 was manually annotated 1 time for cluster A11.
- Start number 17 was manually annotated 23 times for cluster A11.

#### Info for manual annotations of cluster A14:

- Start number 13 was manually annotated 1 time for cluster A14.
- Start number 17 was manually annotated 3 times for cluster A14.

Info for manual annotations of cluster A2:

- Start number 13 was manually annotated 1 time for cluster A2.
- Start number 18 was manually annotated 20 times for cluster A2.

Info for manual annotations of cluster AG:

- Start number 17 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster AO:

- Start number 18 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:

- Start number 17 was manually annotated 7 times for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 17 was manually annotated 2 times for cluster AO2.
- Start number 18 was manually annotated 14 times for cluster AO2.
- Start number 19 was manually annotated 1 time for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 15 was manually annotated 1 time for cluster AO3.
- Start number 17 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster AR:

- Start number 17 was manually annotated 19 times for cluster AR.

Info for manual annotations of cluster EH:

- Start number 18 was manually annotated 2 times for cluster EH.

Info for manual annotations of cluster FH:

- Start number 17 was manually annotated 6 times for cluster FH.
- Start number 18 was manually annotated 1 time for cluster FH.

Info for manual annotations of cluster FL:

- Start number 15 was manually annotated 3 times for cluster FL.
- Start number 17 was manually annotated 1 time for cluster FL.

Info for manual annotations of cluster GA:

- Start number 12 was manually annotated 11 times for cluster GA.

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

Gene: Abba\_5 Start: 5434, Stop: 5739, Start Num: 15

Candidate Starts for Abba\_5:

(Start: 15 @5434 has 4 MA's), (27, 5521), (52, 5641), (57, 5668), (66, 5704),

Gene: Altadena\_5 Start: 5253, Stop: 5561, Start Num: 17

Candidate Starts for Altadena\_5:

(Start: 17 @5253 has 63 MA's), (57, 5484), (59, 5493),

Gene: Aneem\_3 Start: 2057, Stop: 2359, Start Num: 17

Candidate Starts for Aneem\_3:

(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261),

Gene: Anselm\_4 Start: 2360, Stop: 2677, Start Num: 18

Candidate Starts for Anselm\_4:

(Start: 13 @2339 has 3 MA's), (Start: 18 @2360 has 38 MA's), (Start: 19 @2363 has 1 MA's), (22, 2390), (36, 2498),

Gene: Antuna\_10 Start: 5629, Stop: 5952, Start Num: 12

Candidate Starts for Antuna\_10:

(2, 5161), (3, 5188), (4, 5206), (6, 5350), (7, 5410), (Start: 12 @5629 has 11 MA's), (Start: 17 @5662 has 63 MA's), (24, 5707), (28, 5743), (31, 5782), (34, 5794), (62, 5911), (66, 5929), (68, 5938),

Gene: Appa\_9 Start: 5494, Stop: 5811, Start Num: 12

Candidate Starts for Appa\_9:

(6, 5215), (7, 5275), (Start: 12 @5494 has 11 MA's), (Start: 17 @5527 has 63 MA's), (22, 5560), (24, 5572), (30, 5644), (66, 5791),

Gene: ArV1\_004 Start: 4864, Stop: 5190, Start Num: 17

Candidate Starts for ArV1\_004:

(Start: 17 @4864 has 63 MA's), (27, 4954), (32, 4999), (43, 5044), (44, 5047), (45, 5050), (49, 5065), (51, 5071), (54, 5092), (66, 5137),

Gene: Bachome\_3 Start: 2054, Stop: 2356, Start Num: 17

Candidate Starts for Bachome\_3:

(Start: 13 @2036 has 3 MA's), (Start: 17 @2054 has 63 MA's), (32, 2174), (36, 2192), (37, 2201), (50, 2258),

Gene: Baehexic\_4 Start: 2314, Stop: 2628, Start Num: 18

Candidate Starts for Baehexic\_4:

(Start: 13 @2293 has 3 MA's), (Start: 18 @2314 has 38 MA's), (51, 2521),

Gene: BarretLemon\_5 Start: 5150, Stop: 5470, Start Num: 18

Candidate Starts for BarretLemon\_5:

(Start: 18 @5150 has 38 MA's), (Start: 19 @5153 has 1 MA's), (31, 5267), (51, 5342), (59, 5381), (65, 5405),

Gene: Beans\_5 Start: 5184, Stop: 5465, Start Num: 17

Candidate Starts for Beans\_5:

(Start: 17 @5184 has 63 MA's), (30, 5301), (31, 5304), (43, 5352), (45, 5358), (47, 5367), (59, 5418), (67, 5451), (71, 5460),

Gene: Benvolio\_4 Start: 2358, Stop: 2675, Start Num: 18

Candidate Starts for Benvolio\_4:

(Start: 13 @2337 has 3 MA's), (Start: 18 @2358 has 38 MA's), (Start: 19 @2361 has 1 MA's), (22, 2388), (36, 2496),

Gene: BigDome\_5 Start: 5147, Stop: 5467, Start Num: 18

Candidate Starts for BigDome\_5:

(Start: 18 @5147 has 38 MA's), (Start: 19 @5150 has 1 MA's), (31, 5264), (51, 5339), (59, 5378), (65, 5402),

Gene: BlackJade\_7 Start: 6653, Stop: 6967, Start Num: 14

Candidate Starts for BlackJade\_7:

(14, 6653), (27, 6731), (28, 6734), (40, 6806), (48, 6839), (50, 6845), (66, 6914), (72, 6932),

Gene: Blett\_10 Start: 5646, Stop: 5966, Start Num: 12

Candidate Starts for Blett\_10:

(Start: 12 @5646 has 11 MA's), (Start: 17 @5679 has 63 MA's), (22, 5712), (24, 5724), (30, 5796), (54, 5898), (66, 5943), (68, 5952),

Gene: Bolt007\_5 Start: 5214, Stop: 5522, Start Num: 17

Candidate Starts for Bolt007\_5:

(Start: 17 @5214 has 63 MA's), (30, 5337), (38, 5364), (45, 5394),

Gene: BossLady\_5 Start: 5158, Stop: 5448, Start Num: 18

Candidate Starts for BossLady\_5:

(Start: 18 @5158 has 38 MA's), (28, 5239), (32, 5278), (51, 5350), (59, 5389),

Gene: Bowtie\_3 Start: 2057, Stop: 2359, Start Num: 17

Candidate Starts for Bowtie\_3:

(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261),

Gene: Brent\_5 Start: 5178, Stop: 5459, Start Num: 17

Candidate Starts for Brent\_5:

(Start: 17 @5178 has 63 MA's), (20, 5202), (21, 5208), (30, 5295), (31, 5298), (45, 5352), (51, 5373), (67, 5445), (71, 5454),

Gene: Bubbykins\_6 Start: 6312, Stop: 6632, Start Num: 17

Candidate Starts for Bubbykins\_6:

(Start: 17 @6312 has 63 MA's), (28, 6405), (45, 6498), (51, 6519), (54, 6540), (66, 6585), (68, 6594),

Gene: Bud\_3 Start: 2063, Stop: 2365, Start Num: 17

Candidate Starts for Bud\_3:

(Start: 13 @2045 has 3 MA's), (Start: 17 @2063 has 63 MA's), (32, 2183), (35, 2198), (36, 2201), (37, 2210), (50, 2267),

Gene: Bumble\_5 Start: 5268, Stop: 5576, Start Num: 17

Candidate Starts for Bumble\_5:

(Start: 17 @5268 has 63 MA's), (Start: 18 @5271 has 38 MA's), (45, 5448),

Gene: Bush\_10 Start: 5649, Stop: 5960, Start Num: 12

Candidate Starts for Bush\_10:

(Start: 12 @5649 has 11 MA's), (Start: 17 @5682 has 63 MA's), (22, 5715), (24, 5727), (53, 5880), (54, 5892), (66, 5937), (69, 5946),

Gene: CalWood4100\_5 Start: 5208, Stop: 5516, Start Num: 17

Candidate Starts for CalWood4100\_5:

(Start: 17 @5208 has 63 MA's), (30, 5331), (38, 5358), (45, 5388),

Gene: Carrillo\_11 Start: 5599, Stop: 5919, Start Num: 12

Candidate Starts for Carrillo\_11:

(2, 5131), (3, 5158), (4, 5176), (7, 5380), (Start: 12 @5599 has 11 MA's), (Start: 17 @5632 has 63 MA's), (22, 5665), (24, 5677), (31, 5752), (42, 5791), (46, 5809), (66, 5896), (68, 5905),

Gene: Centaur\_4 Start: 2310, Stop: 2624, Start Num: 18

Candidate Starts for Centaur\_4:

(Start: 13 @2289 has 3 MA's), (Start: 18 @2310 has 38 MA's), (51, 2517),

Gene: Chipper1996\_60 Start: 6253, Stop: 6579, Start Num: 17

Candidate Starts for Chipper1996\_60:

(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (55, 6484), (66, 6526),

Gene: Chocolat\_6 Start: 6253, Stop: 6579, Start Num: 17

Candidate Starts for Chocolat\_6:

(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (54, 6481), (55, 6484), (66, 6526),

Gene: Chubster\_6 Start: 6247, Stop: 6573, Start Num: 17

Candidate Starts for Chubster\_6:

(Start: 17 @6247 has 63 MA's), (27, 6337), (32, 6382), (49, 6448), (51, 6454), (54, 6475), (55, 6478), (66, 6520),

Gene: Circuit\_5 Start: 5259, Stop: 5564, Start Num: 18

Candidate Starts for Circuit\_5:

(Start: 17 @5256 has 63 MA's), (Start: 18 @5259 has 38 MA's), (45, 5436),

Gene: Colucci\_6 Start: 6229, Stop: 6546, Start Num: 17

Candidate Starts for Colucci\_6:

(Start: 17 @6229 has 63 MA's), (22, 6262), (27, 6316), (28, 6319), (30, 6355), (43, 6406), (44, 6409), (45, 6412), (49, 6427), (51, 6433), (66, 6499),

Gene: Conboy\_6 Start: 6253, Stop: 6579, Start Num: 17

Candidate Starts for Conboy\_6:

(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (55, 6484), (66, 6526),

Gene: CookieDog\_10 Start: 5649, Stop: 5960, Start Num: 12

Candidate Starts for CookieDog\_10:

(Start: 12 @5649 has 11 MA's), (Start: 17 @5682 has 63 MA's), (22, 5715), (24, 5727), (53, 5880), (54, 5892), (66, 5937), (69, 5946),

Gene: Dalmatian\_4 Start: 2357, Stop: 2674, Start Num: 18

Candidate Starts for Dalmatian\_4:

(Start: 13 @2336 has 3 MA's), (Start: 18 @2357 has 38 MA's), (Start: 19 @2360 has 1 MA's), (22, 2387), (36, 2495),

Gene: DrYang\_6 Start: 6196, Stop: 6501, Start Num: 17

Candidate Starts for DrYang\_6:

(Start: 17 @6196 has 63 MA's), (28, 6283), (31, 6322), (44, 6373), (45, 6376), (49, 6391), (51, 6397), (61, 6442), (66, 6463),

Gene: Drake55\_4 Start: 2316, Stop: 2630, Start Num: 18

Candidate Starts for Drake55\_4:

(Start: 13 @2295 has 3 MA's), (Start: 18 @2316 has 38 MA's), (51, 2523),

Gene: Dropshot\_9 Start: 5494, Stop: 5811, Start Num: 12  
Candidate Starts for Dropshot\_9:  
(6, 5215), (7, 5275), (Start: 12 @5494 has 11 MA's), (Start: 17 @5527 has 63 MA's), (22, 5560), (24, 5572), (30, 5644), (66, 5791),

Gene: DudeLittle\_4 Start: 2357, Stop: 2674, Start Num: 18  
Candidate Starts for DudeLittle\_4:  
(Start: 13 @2336 has 3 MA's), (Start: 18 @2357 has 38 MA's), (Start: 19 @2360 has 1 MA's), (22, 2387), (36, 2495),

Gene: EastWest\_5 Start: 5085, Stop: 5375, Start Num: 18  
Candidate Starts for EastWest\_5:  
(Start: 18 @5085 has 38 MA's), (31, 5208), (51, 5283), (58, 5319), (67, 5355),

Gene: Ebony\_3 Start: 2063, Stop: 2365, Start Num: 17  
Candidate Starts for Ebony\_3:  
(Start: 13 @2045 has 3 MA's), (Start: 17 @2063 has 63 MA's), (32, 2183), (36, 2201), (37, 2210), (50, 2267),

Gene: Echild\_4 Start: 2337, Stop: 2675, Start Num: 13  
Candidate Starts for Echild\_4:  
(Start: 13 @2337 has 3 MA's), (Start: 18 @2358 has 38 MA's), (Start: 19 @2361 has 1 MA's), (22, 2388), (36, 2496),

Gene: EdgarPoe\_6 Start: 6253, Stop: 6579, Start Num: 17  
Candidate Starts for EdgarPoe\_6:  
(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (55, 6484), (66, 6526),

Gene: Equemioh13\_4 Start: 2313, Stop: 2627, Start Num: 18  
Candidate Starts for Equemioh13\_4:  
(Start: 13 @2292 has 3 MA's), (Start: 18 @2313 has 38 MA's), (51, 2520),

Gene: Et2Brutus\_3 Start: 2060, Stop: 2362, Start Num: 17  
Candidate Starts for Et2Brutus\_3:  
(Start: 13 @2042 has 3 MA's), (Start: 17 @2060 has 63 MA's), (32, 2180), (36, 2198), (37, 2207), (50, 2264),

Gene: Fameo\_4 Start: 2357, Stop: 2674, Start Num: 18  
Candidate Starts for Fameo\_4:  
(10, 2246), (Start: 13 @2336 has 3 MA's), (Start: 18 @2357 has 38 MA's), (Start: 19 @2360 has 1 MA's), (22, 2387), (36, 2495),

Gene: Fibonacci\_3 Start: 2060, Stop: 2362, Start Num: 17  
Candidate Starts for Fibonacci\_3:  
(Start: 13 @2042 has 3 MA's), (Start: 17 @2060 has 63 MA's), (32, 2180), (36, 2198), (37, 2207), (50, 2264),

Gene: Flare16\_4 Start: 2313, Stop: 2627, Start Num: 18  
Candidate Starts for Flare16\_4:  
(Start: 13 @2292 has 3 MA's), (Start: 18 @2313 has 38 MA's), (51, 2520),

Gene: Flaverint\_3 Start: 2057, Stop: 2359, Start Num: 17

Candidate Starts for Flaverint\_3:

(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261),

Gene: Franzy\_5 Start: 5178, Stop: 5459, Start Num: 17

Candidate Starts for Franzy\_5:

(Start: 17 @5178 has 63 MA's), (20, 5202), (21, 5208), (30, 5295), (31, 5298), (45, 5352), (51, 5373), (67, 5445), (71, 5454),

Gene: Gail\_3 Start: 2082, Stop: 2399, Start Num: 17

Candidate Starts for Gail\_3:

(10, 1977), (Start: 13 @2064 has 3 MA's), (Start: 17 @2082 has 63 MA's), (43, 2259), (44, 2262),

Gene: GardenState\_5 Start: 5292, Stop: 5564, Start Num: 18

Candidate Starts for GardenState\_5:

(9, 5148), (Start: 18 @5292 has 38 MA's), (20, 5313), (28, 5370), (31, 5409), (66, 5544),

Gene: Gilberta\_3 Start: 2054, Stop: 2356, Start Num: 17

Candidate Starts for Gilberta\_3:

(Start: 13 @2036 has 3 MA's), (Start: 17 @2054 has 63 MA's), (32, 2174), (36, 2192), (37, 2201), (50, 2258),

Gene: GoldDust\_7 Start: 7302, Stop: 7616, Start Num: 15

Candidate Starts for GoldDust\_7:

(Start: 15 @7302 has 4 MA's), (27, 7389), (44, 7482), (54, 7527), (63, 7560), (66, 7572),

Gene: Gooberta\_7 Start: 7302, Stop: 7616, Start Num: 15

Candidate Starts for Gooberta\_7:

(Start: 15 @7302 has 4 MA's), (27, 7389), (44, 7482), (54, 7527), (63, 7560), (66, 7572),

Gene: Gratitude\_4 Start: 2313, Stop: 2627, Start Num: 18

Candidate Starts for Gratitude\_4:

(Start: 13 @2292 has 3 MA's), (Start: 18 @2313 has 38 MA's), (51, 2520),

Gene: GravityBall\_5 Start: 5153, Stop: 5470, Start Num: 19

Candidate Starts for GravityBall\_5:

(Start: 18 @5150 has 38 MA's), (Start: 19 @5153 has 1 MA's), (31, 5267), (51, 5342), (59, 5381), (65, 5405),

Gene: Grekaycon\_5 Start: 5158, Stop: 5448, Start Num: 18

Candidate Starts for Grekaycon\_5:

(Start: 18 @5158 has 38 MA's), (28, 5239), (30, 5272), (32, 5278), (51, 5350), (59, 5389),

Gene: Guzman\_11 Start: 5907, Stop: 6230, Start Num: 12

Candidate Starts for Guzman\_11:

(2, 5439), (3, 5466), (4, 5484), (6, 5628), (7, 5688), (Start: 12 @5907 has 11 MA's), (Start: 17 @5940 has 63 MA's), (24, 5985), (28, 6021), (31, 6060), (34, 6072), (62, 6189), (66, 6207), (68, 6216),

Gene: HarryHoudini\_4 Start: 2316, Stop: 2630, Start Num: 18

Candidate Starts for HarryHoudini\_4:

(Start: 13 @2295 has 3 MA's), (Start: 18 @2316 has 38 MA's), (51, 2523),

Gene: Heffalump\_4 Start: 2357, Stop: 2674, Start Num: 18

Candidate Starts for Heffalump\_4:  
(10, 2246), (Start: 13 @2336 has 3 MA's), (Start: 18 @2357 has 38 MA's), (Start: 19 @2360 has 1 MA's), (22, 2387), (36, 2495),

Gene: HippoHollow\_3 Start: 2058, Stop: 2375, Start Num: 18  
Candidate Starts for HippoHollow\_3:  
(Start: 13 @2037 has 3 MA's), (Start: 18 @2058 has 38 MA's), (22, 2088), (36, 2196),

Gene: Hirko\_6 Start: 6777, Stop: 7094, Start Num: 15  
Candidate Starts for Hirko\_6:  
(Start: 15 @6777 has 4 MA's), (27, 6864), (44, 6957), (54, 7002), (63, 7035), (66, 7047),

Gene: HumptyDumpty\_6 Start: 6253, Stop: 6579, Start Num: 17  
Candidate Starts for HumptyDumpty\_6:  
(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (54, 6481), (55, 6484), (66, 6526),

Gene: Hutc2\_3 Start: 2060, Stop: 2362, Start Num: 17  
Candidate Starts for Hutc2\_3:  
(Start: 13 @2042 has 3 MA's), (Start: 17 @2060 has 63 MA's), (32, 2180), (36, 2198), (37, 2207), (50, 2264),

Gene: Insomnia\_3 Start: 2057, Stop: 2359, Start Num: 17  
Candidate Starts for Insomnia\_3:  
(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261),

Gene: JKerns\_5 Start: 5155, Stop: 5445, Start Num: 18  
Candidate Starts for JKerns\_5:  
(Start: 18 @5155 has 38 MA's), (28, 5236), (32, 5275), (51, 5347), (59, 5386),

Gene: JaNo\_6 Start: 6253, Stop: 6579, Start Num: 17  
Candidate Starts for JaNo\_6:  
(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (54, 6481), (55, 6484), (66, 6526),

Gene: Jabith\_3 Start: 2057, Stop: 2359, Start Num: 17  
Candidate Starts for Jabith\_3:  
(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261),

Gene: Jakelyne\_12 Start: 5643, Stop: 5963, Start Num: 12  
Candidate Starts for Jakelyne\_12:  
(2, 5175), (3, 5202), (4, 5220), (7, 5424), (Start: 12 @5643 has 11 MA's), (Start: 17 @5676 has 63 MA's), (22, 5709), (24, 5721), (30, 5793), (54, 5895), (66, 5940), (68, 5949),

Gene: Jawnski\_5 Start: 5178, Stop: 5459, Start Num: 17  
Candidate Starts for Jawnski\_5:  
(Start: 17 @5178 has 63 MA's), (20, 5202), (21, 5208), (30, 5295), (31, 5298), (45, 5352), (51, 5373), (67, 5445), (71, 5454),

Gene: JayCookie\_6 Start: 6253, Stop: 6579, Start Num: 17  
Candidate Starts for JayCookie\_6:

(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (54, 6481), (55, 6484), (56, 6487), (66, 6526),

Gene: Jeeves\_3 Start: 2107, Stop: 2421, Start Num: 17

Candidate Starts for Jeeves\_3:

(Start: 13 @2089 has 3 MA's), (Start: 17 @2107 has 63 MA's), (22, 2137), (31, 2224), (51, 2314), (65, 2377),

Gene: Jordan\_5 Start: 5155, Stop: 5445, Start Num: 18

Candidate Starts for Jordan\_5:

(Start: 18 @5155 has 38 MA's), (28, 5236), (32, 5275), (51, 5347), (59, 5386),

Gene: Joselito\_3 Start: 2057, Stop: 2359, Start Num: 17

Candidate Starts for Joselito\_3:

(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261),

Gene: KBurrousTX\_6 Start: 6280, Stop: 6585, Start Num: 17

Candidate Starts for KBurrousTX\_6:

(Start: 17 @6280 has 63 MA's), (28, 6367), (31, 6406), (39, 6433), (45, 6460), (51, 6481), (61, 6526), (66, 6547),

Gene: Kabreeze\_6 Start: 6253, Stop: 6579, Start Num: 17

Candidate Starts for Kabreeze\_6:

(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (54, 6481), (55, 6484), (66, 6526),

Gene: Kimba\_3 Start: 2057, Stop: 2359, Start Num: 17

Candidate Starts for Kimba\_3:

(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261),

Gene: King2\_5 Start: 5178, Stop: 5459, Start Num: 17

Candidate Starts for King2\_5:

(Start: 17 @5178 has 63 MA's), (20, 5202), (21, 5208), (30, 5295), (31, 5298), (45, 5352), (51, 5373), (67, 5445), (71, 5454),

Gene: Klevey\_5 Start: 5208, Stop: 5516, Start Num: 17

Candidate Starts for Klevey\_5:

(Start: 17 @5208 has 63 MA's), (30, 5331), (38, 5358), (45, 5388), (58, 5445),

Gene: LeeroyJ\_5 Start: 5150, Stop: 5470, Start Num: 18

Candidate Starts for LeeroyJ\_5:

(Start: 18 @5150 has 38 MA's), (Start: 19 @5153 has 1 MA's), (31, 5267), (51, 5342), (59, 5381), (65, 5405),

Gene: Lilmac1015\_5 Start: 5208, Stop: 5516, Start Num: 17

Candidate Starts for Lilmac1015\_5:

(Start: 17 @5208 has 63 MA's), (30, 5331), (38, 5358), (45, 5388),

Gene: Linus\_6 Start: 6250, Stop: 6576, Start Num: 17

Candidate Starts for Linus\_6:

(Start: 17 @6250 has 63 MA's), (27, 6340), (32, 6385), (49, 6451), (51, 6457), (54, 6478), (55, 6481), (56, 6484), (66, 6523),

Gene: LionsBait\_3 Start: 2052, Stop: 2369, Start Num: 18

Candidate Starts for LionsBait\_3:

(Start: 13 @2031 has 3 MA's), (Start: 18 @2052 has 38 MA's), (22, 2082), (36, 2190),

Gene: Losacky\_11 Start: 5793, Stop: 6101, Start Num: 12

Candidate Starts for Losacky\_11:

(Start: 12 @5793 has 11 MA's), (Start: 17 @5826 has 63 MA's), (24, 5871), (31, 5946), (41, 5973), (66, 6081), (68, 6090),

Gene: Luchador\_3 Start: 2067, Stop: 2405, Start Num: 13

Candidate Starts for Luchador\_3:

(8, 1857), (Start: 13 @2067 has 3 MA's), (Start: 18 @2088 has 38 MA's), (51, 2295), (65, 2358), (70, 2373),

Gene: Lucivia\_3 Start: 2054, Stop: 2356, Start Num: 17

Candidate Starts for Lucivia\_3:

(Start: 13 @2036 has 3 MA's), (Start: 17 @2054 has 63 MA's), (32, 2174), (36, 2192), (37, 2201), (50, 2258),

Gene: Lukepolites\_5 Start: 5338, Stop: 5628, Start Num: 17

Candidate Starts for Lukepolites\_5:

(Start: 17 @5338 has 63 MA's), (29, 5458), (45, 5521), (51, 5542), (64, 5599), (68, 5617),

Gene: Lymara\_6 Start: 6247, Stop: 6573, Start Num: 17

Candidate Starts for Lymara\_6:

(Start: 17 @6247 has 63 MA's), (27, 6337), (43, 6427), (44, 6430), (49, 6448), (51, 6454), (54, 6475), (55, 6478), (66, 6520),

Gene: MaCh\_3 Start: 2054, Stop: 2356, Start Num: 17

Candidate Starts for MaCh\_3:

(Start: 13 @2036 has 3 MA's), (Start: 17 @2054 has 63 MA's), (32, 2174), (36, 2192), (37, 2201), (50, 2258),

Gene: Mabel\_3 Start: 2069, Stop: 2371, Start Num: 17

Candidate Starts for Mabel\_3:

(Start: 13 @2051 has 3 MA's), (Start: 17 @2069 has 63 MA's), (32, 2189), (36, 2207), (37, 2216), (50, 2273),

Gene: Mabodamaca\_5 Start: 5406, Stop: 5678, Start Num: 18

Candidate Starts for Mabodamaca\_5:

(Start: 18 @5406 has 38 MA's), (20, 5427), (27, 5481), (33, 5529), (44, 5565), (66, 5658), (68, 5667),

Gene: Mariel\_13 Start: 5802, Stop: 6125, Start Num: 12

Candidate Starts for Mariel\_13:

(2, 5334), (3, 5361), (4, 5379), (6, 5523), (7, 5583), (Start: 12 @5802 has 11 MA's), (Start: 17 @5835 has 63 MA's), (24, 5880), (28, 5916), (31, 5955), (34, 5967), (62, 6084), (66, 6102), (68, 6111),

Gene: Martha\_5 Start: 5158, Stop: 5448, Start Num: 18

Candidate Starts for Martha\_5:

(Start: 18 @5158 has 38 MA's), (28, 5239), (30, 5272), (32, 5278), (51, 5350), (59, 5389),

Gene: MenE\_10 Start: 5760, Stop: 6080, Start Num: 12

Candidate Starts for MenE\_10:

(2, 5292), (3, 5319), (4, 5337), (7, 5541), (Start: 12 @5760 has 11 MA's), (Start: 17 @5793 has 63 MA's), (22, 5826), (24, 5838), (30, 5910), (54, 6012), (66, 6057), (68, 6066),

Gene: MiculUcigas\_4 Start: 2313, Stop: 2627, Start Num: 18

Candidate Starts for MiculUcigas\_4:

(Start: 13 @2292 has 3 MA's), (Start: 18 @2313 has 38 MA's), (51, 2520),

Gene: Mordred\_6 Start: 6253, Stop: 6579, Start Num: 17

Candidate Starts for Mordred\_6:

(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (54, 6481), (55, 6484), (66, 6526),

Gene: MoyaNatalis\_6 Start: 6253, Stop: 6579, Start Num: 17

Candidate Starts for MoyaNatalis\_6:

(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (54, 6481), (55, 6484), (56, 6487), (66, 6526),

Gene: Mulciber\_3 Start: 2042, Stop: 2362, Start Num: 13

Candidate Starts for Mulciber\_3:

(Start: 13 @2042 has 3 MA's), (Start: 17 @2060 has 63 MA's), (32, 2180), (36, 2198), (37, 2207), (50, 2264),

Gene: Munch\_3 Start: 2057, Stop: 2359, Start Num: 17

Candidate Starts for Munch\_3:

(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261),

Gene: Music\_7 Start: 7172, Stop: 7486, Start Num: 15

Candidate Starts for Music\_7:

(Start: 15 @7172 has 4 MA's), (27, 7259), (44, 7352), (54, 7397), (63, 7430), (66, 7442),

Gene: NCRodriguez\_11 Start: 5763, Stop: 6083, Start Num: 12

Candidate Starts for NCRodriguez\_11:

(Start: 12 @5763 has 11 MA's), (Start: 17 @5796 has 63 MA's), (22, 5829), (24, 5841), (31, 5916), (66, 6060), (68, 6069),

Gene: NaSiaTalie\_4 Start: 2313, Stop: 2627, Start Num: 18

Candidate Starts for NaSiaTalie\_4:

(Start: 13 @2292 has 3 MA's), (Start: 18 @2313 has 38 MA's), (51, 2520),

Gene: Nandito\_5 Start: 5204, Stop: 5512, Start Num: 17

Candidate Starts for Nandito\_5:

(Start: 17 @5204 has 63 MA's), (28, 5291), (30, 5327), (38, 5354), (45, 5384), (55, 5429),

Gene: NathanVaag\_5 Start: 5184, Stop: 5465, Start Num: 17

Candidate Starts for NathanVaag\_5:

(Start: 17 @5184 has 63 MA's), (31, 5304), (43, 5352), (45, 5358), (47, 5367), (59, 5418), (67, 5451),

Gene: Nergal\_8 Start: 6878, Stop: 7195, Start Num: 17

Candidate Starts for Nergal\_8:

(16, 6872), (Start: 17 @6878 has 63 MA's), (Start: 18 @6881 has 38 MA's), (25, 6926), (26, 6935), (29, 6989), (30, 6995), (35, 7016), (37, 7022), (44, 7055), (60, 7118), (72, 7160),

Gene: Nostromo\_5 Start: 5605, Stop: 5910, Start Num: 17

Candidate Starts for Nostromo\_5:

(11, 5524), (Start: 17 @5605 has 63 MA's), (27, 5692), (44, 5785), (52, 5812), (57, 5839), (66, 5875),

Gene: Orange\_3 Start: 2057, Stop: 2359, Start Num: 17

Candidate Starts for Orange\_3:

(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261), (51, 2264),

Gene: Petersenfast\_3 Start: 2060, Stop: 2362, Start Num: 17

Candidate Starts for Petersenfast\_3:

(Start: 13 @2042 has 3 MA's), (Start: 17 @2060 has 63 MA's), (32, 2180), (36, 2198), (37, 2207), (50, 2264),

Gene: PhillyJawn\_10 Start: 5527, Stop: 5811, Start Num: 17

Candidate Starts for PhillyJawn\_10:

(6, 5215), (7, 5275), (Start: 12 @5494 has 11 MA's), (Start: 17 @5527 has 63 MA's), (22, 5560), (24, 5572), (30, 5644), (66, 5791),

Gene: Phingu\_12 Start: 5652, Stop: 5972, Start Num: 12

Candidate Starts for Phingu\_12:

(Start: 12 @5652 has 11 MA's), (Start: 17 @5685 has 63 MA's), (22, 5718), (24, 5730), (30, 5802), (54, 5904), (66, 5949), (68, 5958),

Gene: Phonegingi\_9 Start: 5483, Stop: 5809, Start Num: 12

Candidate Starts for Phonegingi\_9:

(1, 4913), (3, 5042), (4, 5060), (7, 5264), (Start: 12 @5483 has 11 MA's), (Start: 17 @5516 has 63 MA's), (22, 5549), (24, 5561), (27, 5594), (28, 5597), (35, 5654), (54, 5741), (56, 5747), (66, 5786), (68, 5795),

Gene: Piccoletto\_5 Start: 5184, Stop: 5465, Start Num: 17

Candidate Starts for Piccoletto\_5:

(Start: 17 @5184 has 63 MA's), (31, 5304), (43, 5352), (45, 5358), (47, 5367), (59, 5418), (67, 5451),

Gene: Pickles13\_9 Start: 5631, Stop: 5948, Start Num: 12

Candidate Starts for Pickles13\_9:

(1, 5061), (3, 5190), (6, 5352), (Start: 12 @5631 has 11 MA's), (Start: 17 @5664 has 63 MA's), (22, 5697), (24, 5709), (30, 5781), (66, 5928),

Gene: Pippa\_5 Start: 5154, Stop: 5477, Start Num: 18

Candidate Starts for Pippa\_5:

(Start: 18 @5154 has 38 MA's), (28, 5235), (32, 5274), (59, 5385),

Gene: Piro94\_3 Start: 2317, Stop: 2631, Start Num: 18

Candidate Starts for Piro94\_3:

(Start: 13 @2296 has 3 MA's), (Start: 18 @2317 has 38 MA's), (51, 2524),

Gene: Prairie\_5 Start: 5208, Stop: 5516, Start Num: 17

Candidate Starts for Prairie\_5:

(Start: 17 @5208 has 63 MA's), (30, 5331), (38, 5358), (45, 5388),

Gene: PrincessTrina\_6 Start: 6253, Stop: 6579, Start Num: 17

Candidate Starts for PrincessTrina\_6:

(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (54, 6481), (55, 6484), (56, 6487), (66, 6526),

Gene: QueenB2\_4 Start: 2357, Stop: 2674, Start Num: 18

Candidate Starts for QueenB2\_4:

(10, 2246), (Start: 13 @2336 has 3 MA's), (Start: 18 @2357 has 38 MA's), (Start: 19 @2360 has 1 MA's), (22, 2387), (36, 2495),

Gene: Retro23\_4 Start: 2357, Stop: 2674, Start Num: 18

Candidate Starts for Retro23\_4:

(Start: 13 @2336 has 3 MA's), (Start: 18 @2357 has 38 MA's), (Start: 19 @2360 has 1 MA's), (22, 2387), (36, 2495),

Gene: RosiePosie\_6 Start: 6253, Stop: 6579, Start Num: 17

Candidate Starts for RosiePosie\_6:

(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (54, 6481), (55, 6484), (66, 6526),

Gene: Salz\_3 Start: 2057, Stop: 2359, Start Num: 17

Candidate Starts for Salz\_3:

(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261),

Gene: Saskia\_3 Start: 2060, Stop: 2362, Start Num: 17

Candidate Starts for Saskia\_3:

(Start: 13 @2042 has 3 MA's), (Start: 17 @2060 has 63 MA's), (32, 2180), (36, 2198), (37, 2207), (50, 2264), (51, 2267),

Gene: Scavito\_6 Start: 6253, Stop: 6579, Start Num: 17

Candidate Starts for Scavito\_6:

(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (54, 6481), (55, 6484), (66, 6526),

Gene: Shade\_5 Start: 5155, Stop: 5445, Start Num: 18

Candidate Starts for Shade\_5:

(Start: 18 @5155 has 38 MA's), (28, 5236), (32, 5275), (51, 5347), (59, 5386),

Gene: Sham4\_3 Start: 2060, Stop: 2362, Start Num: 17

Candidate Starts for Sham4\_3:

(Start: 13 @2042 has 3 MA's), (Start: 17 @2060 has 63 MA's), (32, 2180), (36, 2198), (37, 2207), (50, 2264),

Gene: Sicarius2\_5 Start: 5199, Stop: 5504, Start Num: 17

Candidate Starts for Sicarius2\_5:

(Start: 17 @5199 has 63 MA's), (51, 5400), (58, 5436), (67, 5472),

Gene: Sknot\_4 Start: 2313, Stop: 2627, Start Num: 18

Candidate Starts for Sknot\_4:

(Start: 13 @2292 has 3 MA's), (Start: 18 @2313 has 38 MA's), (51, 2520),

Gene: Snape\_3 Start: 2063, Stop: 2365, Start Num: 17  
Candidate Starts for Snape\_3:  
(Start: 13 @2045 has 3 MA's), (Start: 17 @2063 has 63 MA's), (32, 2183), (36, 2201), (37, 2210), (50, 2267),

Gene: Sonny\_5 Start: 5155, Stop: 5445, Start Num: 18  
Candidate Starts for Sonny\_5:  
(Start: 18 @5155 has 38 MA's), (28, 5236), (32, 5275), (51, 5347), (59, 5386),

Gene: SororFago\_3 Start: 2085, Stop: 2402, Start Num: 17  
Candidate Starts for SororFago\_3:  
(5, 1758), (6, 1776), (8, 1857), (Start: 13 @2067 has 3 MA's), (Start: 17 @2085 has 63 MA's), (28, 2163), (51, 2292), (65, 2355), (70, 2370),

Gene: StevieBAY\_5 Start: 5150, Stop: 5470, Start Num: 18  
Candidate Starts for StevieBAY\_5:  
(Start: 18 @5150 has 38 MA's), (Start: 19 @5153 has 1 MA's), (31, 5267), (51, 5342), (59, 5381), (65, 5405),

Gene: Sunhee\_3 Start: 2105, Stop: 2419, Start Num: 17  
Candidate Starts for Sunhee\_3:  
(10, 2000), (Start: 13 @2087 has 3 MA's), (Start: 17 @2105 has 63 MA's), (28, 2183), (31, 2222), (32, 2225), (51, 2312),

Gene: TaeYoung\_5 Start: 5158, Stop: 5448, Start Num: 18  
Candidate Starts for TaeYoung\_5:  
(Start: 18 @5158 has 38 MA's), (28, 5239), (30, 5272), (32, 5278), (51, 5350), (59, 5389),

Gene: Terrific\_5 Start: 2309, Stop: 2623, Start Num: 18  
Candidate Starts for Terrific\_5:  
(Start: 13 @2288 has 3 MA's), (Start: 18 @2309 has 38 MA's), (51, 2516),

Gene: Timinator\_5 Start: 5150, Stop: 5470, Start Num: 18  
Candidate Starts for Timinator\_5:  
(Start: 18 @5150 has 38 MA's), (Start: 19 @5153 has 1 MA's), (31, 5267), (51, 5342), (59, 5381), (65, 5405),

Gene: Timothy\_3 Start: 2057, Stop: 2359, Start Num: 17  
Candidate Starts for Timothy\_3:  
(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261),

Gene: TinyTimmy\_3 Start: 2057, Stop: 2359, Start Num: 17  
Candidate Starts for TinyTimmy\_3:  
(Start: 13 @2039 has 3 MA's), (Start: 17 @2057 has 63 MA's), (32, 2177), (36, 2195), (37, 2204), (50, 2261),

Gene: Tophat\_6 Start: 6253, Stop: 6579, Start Num: 17  
Candidate Starts for Tophat\_6:  
(Start: 17 @6253 has 63 MA's), (27, 6343), (32, 6388), (49, 6454), (51, 6460), (55, 6484), (66, 6526),

Gene: Updawg\_4 Start: 2313, Stop: 2627, Start Num: 18  
Candidate Starts for Updawg\_4:

(Start: 13 @2292 has 3 MA's), (Start: 18 @2313 has 38 MA's), (51, 2520),

Gene: Vibaki\_7 Start: 7199, Stop: 7516, Start Num: 15

Candidate Starts for Vibaki\_7:

(Start: 15 @7199 has 4 MA's), (27, 7286), (44, 7379), (54, 7424), (63, 7457), (66, 7469),

Gene: Violeta\_11 Start: 5590, Stop: 5910, Start Num: 12

Candidate Starts for Violeta\_11:

(2, 5122), (3, 5149), (4, 5167), (7, 5371), (Start: 12 @5590 has 11 MA's), (Start: 17 @5623 has 63 MA's), (22, 5656), (24, 5668), (30, 5740), (54, 5842), (66, 5887), (68, 5896),

Gene: Vitus\_7 Start: 7057, Stop: 7371, Start Num: 17

Candidate Starts for Vitus\_7:

(11, 6982), (Start: 17 @7057 has 63 MA's), (23, 7093), (27, 7144), (51, 7261), (57, 7291), (66, 7327),

Gene: Warren\_10 Start: 5673, Stop: 5990, Start Num: 12

Candidate Starts for Warren\_10:

(1, 5103), (3, 5232), (4, 5250), (7, 5454), (Start: 12 @5673 has 11 MA's), (Start: 17 @5706 has 63 MA's), (22, 5739), (24, 5751), (30, 5823), (54, 5925), (66, 5970),

Gene: WideWale\_4 Start: 2313, Stop: 2627, Start Num: 18

Candidate Starts for WideWale\_4:

(Start: 13 @2292 has 3 MA's), (Start: 18 @2313 has 38 MA's), (51, 2520),

Gene: Winchester007\_25 Start: 11610, Stop: 11933, Start Num: 12

Candidate Starts for Winchester007\_25:

(1, 11040), (3, 11169), (4, 11187), (6, 11331), (7, 11391), (Start: 12 @11610 has 11 MA's), (Start: 17 @11643 has 63 MA's), (24, 11688), (28, 11724), (31, 11763), (34, 11775), (62, 11892), (66, 11910), (68, 11919),

Gene: Wolpertinger\_3 Start: 2060, Stop: 2362, Start Num: 17

Candidate Starts for Wolpertinger\_3:

(Start: 13 @2042 has 3 MA's), (Start: 17 @2060 has 63 MA's), (32, 2180), (36, 2198), (37, 2207), (50, 2264),

Gene: Wyborn\_5 Start: 5205, Stop: 5510, Start Num: 17

Candidate Starts for Wyborn\_5:

(Start: 17 @5205 has 63 MA's), (39, 5358), (51, 5406), (58, 5442), (63, 5460), (67, 5478),

Gene: Zartrosa\_5 Start: 5155, Stop: 5445, Start Num: 18

Candidate Starts for Zartrosa\_5:

(Start: 18 @5155 has 38 MA's), (28, 5236), (32, 5275), (51, 5347), (59, 5386),