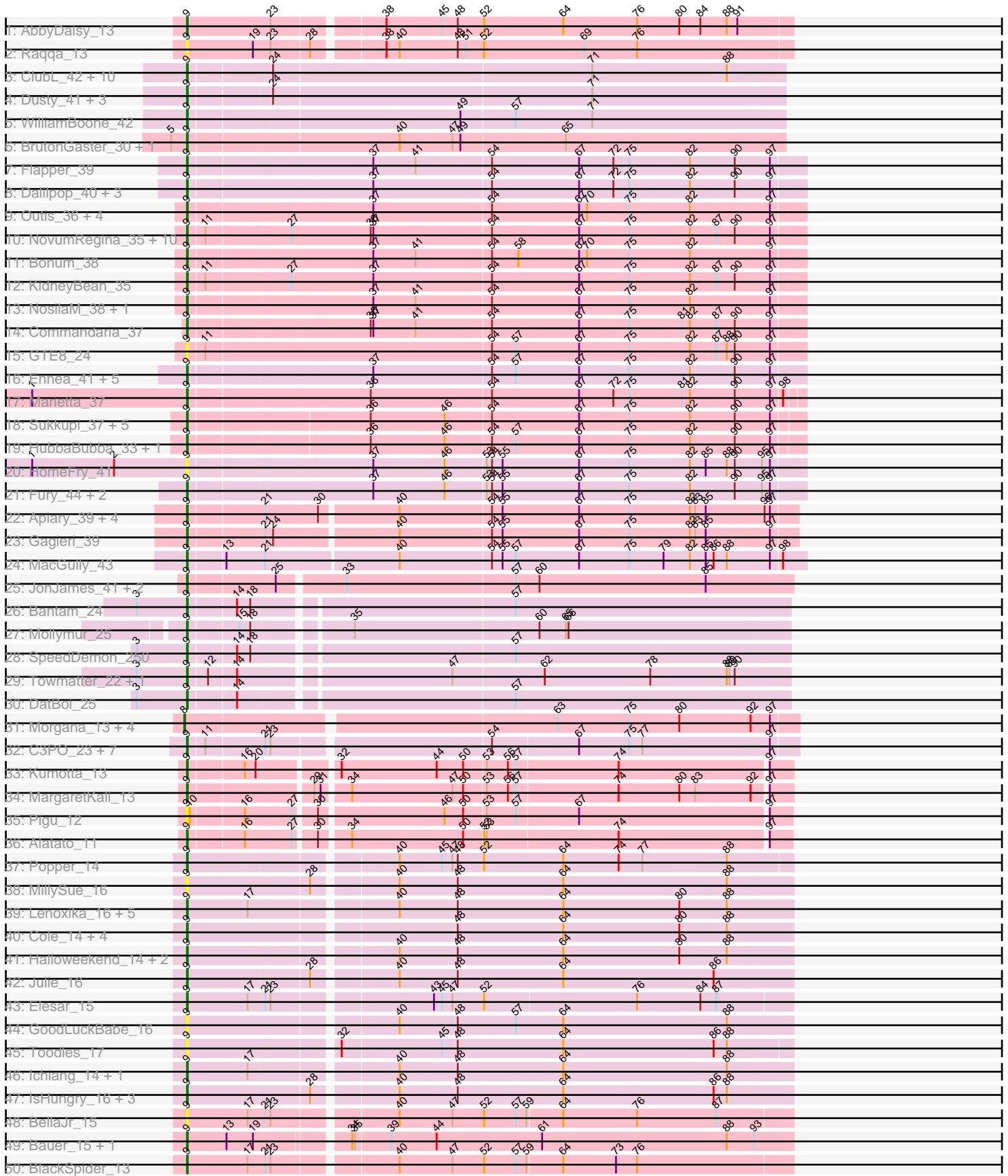
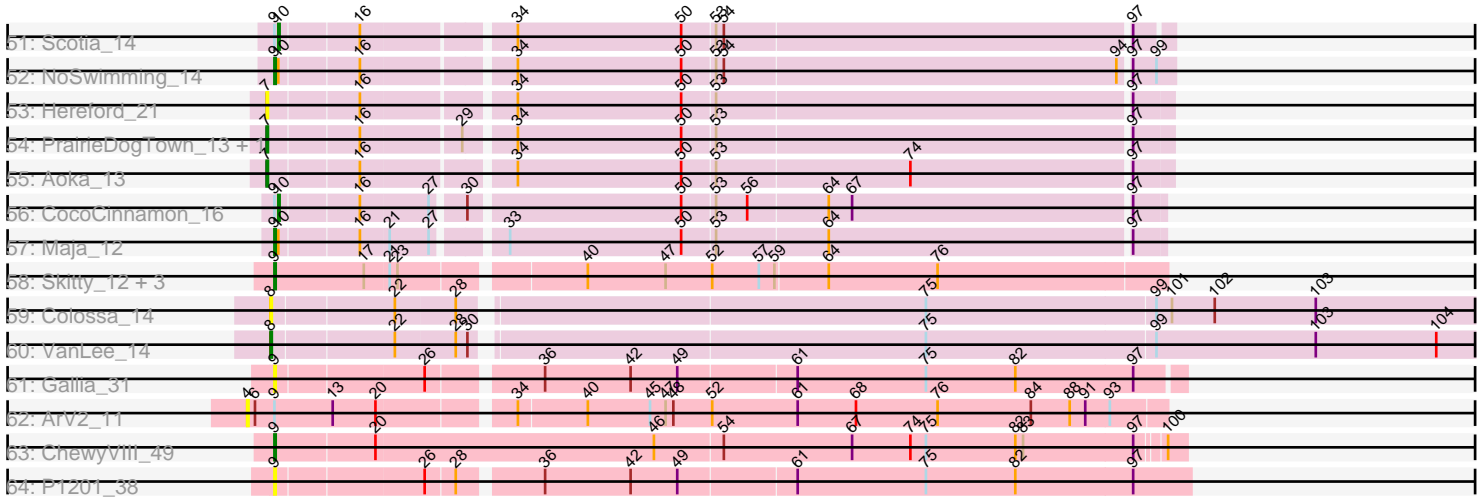


Pham 294503



Pham 294503



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 294503 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294503 has 147 members, 27 are drafts.

Phages represented in each track:

- Track 1 : AbbyDaisy\_13
- Track 2 : Raqqa\_13
- Track 3 : ClubL\_42, Geeche\_41, Lozinak\_42, Engineer\_43, Toniann\_42, Bachita\_44, Norvs\_43, Smoothie\_43, Cucurbita\_44, Aphelion\_42, PhinkBoden\_42
- Track 4 : Dusty\_41, Miskis\_40, Abscondus\_41, Culver\_42
- Track 5 : WilliamBoone\_42
- Track 6 : BrutonGaster\_30, OneUp\_36
- Track 7 : Flapper\_39
- Track 8 : Dalipop\_40, Turuncu\_39, GRU1\_25, GTE5\_26
- Track 9 : Outis\_36, StarStruck\_36, Buggaboo\_36, MerCougar\_36, SuperSulley\_36
- Track 10 : NovumRegina\_35, GrootJr\_37, Jifall16\_34, Foxboro\_36, Wheezy\_35, Tracker\_35, Arti\_35, NatB6\_35, Kurt\_35, Phomeo\_34, Emianna\_35
- Track 11 : Bonum\_38
- Track 12 : KidneyBean\_35
- Track 13 : NosilaM\_38, Kabluna\_38
- Track 14 : Commandaria\_37
- Track 15 : GTE8\_24
- Track 16 : Ennea\_41, Patio\_38, Lollipop1437\_40, RedRaider\_42, Float294\_37, Skysand\_37
- Track 17 : Marietta\_37
- Track 18 : Sukkupi\_37, Pemberton\_38, BiPauneto\_38, NadineRae\_35, Yndexa\_37, IDyn\_36
- Track 19 : HubbaBubba\_33, WhoseManz\_37
- Track 20 : HomeFry\_41
- Track 21 : Fury\_44, Scuba\_44, Pleakley\_44
- Track 22 : Apiary\_39, Polyuyuki\_39, Maselop\_39, CoffeeBean\_39, Braxoaddie\_39
- Track 23 : Gagieri\_39
- Track 24 : MacGully\_43
- Track 25 : JonJames\_41, Cardigan\_41, Yvonnetastic\_39
- Track 26 : Bantam\_24
- Track 27 : Mollymur\_25
- Track 28 : SpeedDemon\_250
- Track 29 : Towmatter\_22, Daredevil\_23
- Track 30 : DatBoi\_25
- Track 31 : Morgana\_13, ModicumRichard\_13, ObLaDi\_13, Cafasso\_13, Aleemily\_13

- Track 32 : C3PO\_23, Cruella\_23, Darwin\_26, PotatoChip\_23, Kimchi1738\_23, Stickynote\_25, Zion\_23, PeteyPab\_22
- Track 33 : Kumotta\_13
- Track 34 : MargaretKali\_13
- Track 35 : Pigu\_12
- Track 36 : Alatato\_11
- Track 37 : Popper\_14
- Track 38 : MillySue\_16
- Track 39 : Lenoxika\_16, Schism\_16, Nandita\_16, Guinevere\_16, Donatella\_15, Saintcarr\_15
- Track 40 : Cole\_14, QuinnAvery\_16, ToastyOats\_18, BigSherm\_15, Kihatsu\_17
- Track 41 : Halloween\_14, Yonex\_16, Ryan\_16
- Track 42 : Julie\_16
- Track 43 : Elesar\_15
- Track 44 : GoodLuckBabe\_16
- Track 45 : Toodles\_17
- Track 46 : Ichiang\_14, Zaheer\_16
- Track 47 : IsHungry\_16, AllBusiness\_15, Dirdigger\_16, Gusanita\_14
- Track 48 : BellaJr\_15
- Track 49 : Bauer\_15, Zucker\_14
- Track 50 : BlackSpider\_13
- Track 51 : Scotia\_14
- Track 52 : NoSwimming\_14
- Track 53 : Hereford\_21
- Track 54 : PrairieDogTown\_13, EvenBluerMoon\_13
- Track 55 : Aoka\_13
- Track 56 : CocoCinnamon\_16
- Track 57 : Maja\_12
- Track 58 : Skitty\_12, MrSmee\_12, Merpity\_13, Cassini\_13
- Track 59 : Colossa\_14
- Track 60 : VanLee\_14
- Track 61 : Gallia\_31
- Track 62 : ArV2\_11
- Track 63 : ChewyVIII\_49
- Track 64 : P1201\_38

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

The start number called the most often in the published annotations is 9, it was called in 109 of the 120 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbyDaisy\_13, Abscondus\_41, Alatato\_11, AllBusiness\_15, Aphelion\_42, Apiary\_39, Arti\_35, Bachita\_44, Bantam\_24, Bauer\_15, BellaJr\_15, BiPauneto\_38, BigSherm\_15, BlackSpider\_13, Bonum\_38, Braxoaddie\_39, BrutonGaster\_30, Buggaboo\_36, C3PO\_23, Cardigan\_41, Cassini\_13, ChewyVIII\_49, ClubL\_42, CoffeeBean\_39, Cole\_14, Commandaria\_37, Cruella\_23, Cucurbita\_44, Culver\_42, Dalilpop\_40, Daredevil\_23, Darwin\_26, DatBoi\_25, Dirdigger\_16, Donatella\_15, Dusty\_41, Elesar\_15, Emianna\_35, Engineer\_43, Ennea\_41, Flapper\_39, Float294\_37, Foxboro\_36, Fury\_44, GRU1\_25, GTE5\_26, GTE8\_24, Gagieri\_39,

Gallia\_31, Geeche\_41, GoodLuckBabe\_16, GrootJr\_37, Guinevere\_16, Gusanita\_14, Halloweekend\_14, HomeFry\_41, HubbaBubba\_33, IDyn\_36, Ichiang\_14, IsHungry\_16, Jifall16\_34, JonJames\_41, Julie\_16, Kabluna\_38, KidneyBean\_35, Kihatsu\_17, Kimchi1738\_23, Kumotta\_13, Kurt\_35, Lenoxika\_16, Lollipop1437\_40, Lozinak\_42, MacGully\_43, Maja\_12, MargaretKali\_13, Marietta\_37, Maselop\_39, MerCougar\_36, Merpity\_13, MillySue\_16, Miskis\_40, Mollymur\_25, MrSmee\_12, NadineRae\_35, Nandita\_16, NatB6\_35, NoSwimming\_14, Norvs\_43, NosilaM\_38, NovumRegina\_35, OneUp\_36, Outis\_36, P1201\_38, Patio\_38, Pemberton\_38, PeteyPab\_22, PhinkBoden\_42, Phomeo\_34, Pigu\_12, Pleakley\_44, Polyuyuki\_39, Popper\_14, PotatoChip\_23, QuinnAvery\_16, Raqqa\_13, RedRaider\_42, Ryan\_16, Saintcarr\_15, Schism\_16, Scuba\_44, Skitty\_12, Skysand\_37, Smoothie\_43, SpeedDemon\_250, StarStruck\_36, Stickynote\_25, Sukkupi\_37, SuperSulley\_36, ToastyOats\_18, Toniann\_42, Toodles\_17, Towmatter\_22, Tracker\_35, Turuncu\_39, Wheezy\_35, WhoseManz\_37, WilliamBoone\_42, Yndexa\_37, Yonex\_16, Yvonnestic\_39, Zaheer\_16, Zion\_23, Zucker\_14,

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

- ArV2\_11, CocoCinnamon\_16, Scotia\_14,

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

- Aleemily\_13, Aoka\_13, Cafasso\_13, Colossa\_14, EvenBluerMoon\_13, Hereford\_21, ModicumRichard\_13, Morgana\_13, ObLaDi\_13, PrairieDogTown\_13, VanLee\_14,

### Summary by start number:

Start 4:

- Found in 1 of 147 ( 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: ArV2\_11 (singleton),

Start 7:

- Found in 4 of 147 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 3 of 120
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aoka\_13 (FO), EvenBluerMoon\_13 (FO), Hereford\_21 (FO), PrairieDogTown\_13 (FO),

Start 8:

- Found in 7 of 147 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 6 of 120
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aleemily\_13 (DZ), Cafasso\_13 (DZ), Colossa\_14 (KA), ModicumRichard\_13 (DZ), Morgana\_13 (DZ), ObLaDi\_13 (DZ), VanLee\_14 (KA),

Start 9:

- Found in 136 of 147 ( 92.5% ) of genes in pham
- Manual Annotations of this start: 109 of 120
- Called 97.8% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_13 (AY), Abscondus\_41 (CQ1), Alatato\_11 (FB), AllBusiness\_15 (FF), Aphelion\_42 (CQ1), Apiary\_39 (CR6), Arti\_35 (CR2), Bachita\_44 (CQ1), Bantam\_24 (DL), Bauer\_15 (FN), BellaJr\_15 (FN),

BiPauneto\_38 (CR4), BigSherm\_15 (FF), BlackSpider\_13 (FN), Bonum\_38 (CR2), Braxoaddie\_39 (CR6), BrutonGaster\_30 (CQ2), Buggaboo\_36 (CR2), C3PO\_23 (EN), Cardigan\_41 (DD), Cassini\_13 (FN), ChewyVIII\_49 (singleton), ClubL\_42 (CQ1), CoffeeBean\_39 (CR6), Cole\_14 (FF), Commandaria\_37 (CR2), Cruella\_23 (EN), Cucurbita\_44 (CQ1), Culver\_42 (CQ1), Dalilpop\_40 (CR1), Daredevil\_23 (DL), Darwin\_26 (EN), DatBoi\_25 (DL), Dirtdigger\_16 (FF), Donatella\_15 (FF), Dusty\_41 (CQ1), Elesar\_15 (FF), Emianna\_35 (CR2), Engineer\_43 (CQ1), Ennea\_41 (CR3), Flapper\_39 (CR1), Float294\_37 (CR3), Foxboro\_36 (CR2), Fury\_44 (CR5), GRU1\_25 (CR1), GTE5\_26 (CR1), GTE8\_24 (CR2), Gagieri\_39 (CR6), Gallia\_31 (singleton), Geeche\_41 (CQ1), GoodLuckBabe\_16 (FF), GrootJr\_37 (CR2), Guinevere\_16 (FF), Gusanita\_14 (FF), Halloween\_14 (FF), HomeFry\_41 (CR5), HubbaBubba\_33 (CR4), IDyn\_36 (CR4), Ichiang\_14 (FF), IsHungry\_16 (FF), Jifall16\_34 (CR2), JonJames\_41 (DD), Julie\_16 (FF), Kabluna\_38 (CR2), KidneyBean\_35 (CR2), Kihatsu\_17 (FF), Kimchi1738\_23 (EN), Kumotta\_13 (FB), Kurt\_35 (CR2), Lenoxika\_16 (FF), Lollipop1437\_40 (CR3), Lozinak\_42 (CQ1), MacGully\_43 (CR7), Maja\_12 (FO), MargaretKali\_13 (FB), Marietta\_37 (CR4), Maselop\_39 (CR6), MerCougar\_36 (CR2), Merpity\_13 (FQ), MillySue\_16 (FF), Miskis\_40 (CQ1), Mollymur\_25 (DL), MrSmee\_12 (FQ), NadineRae\_35 (CR4), Nandita\_16 (FF), NatB6\_35 (CR2), NoSwimming\_14 (FO), Norvs\_43 (CQ1), NosilaM\_38 (CR2), NovumRegina\_35 (CR2), OneUp\_36 (CQ2), Outis\_36 (CR2), P1201\_38 (singleton), Patio\_38 (CR3), Pemberton\_38 (CR4), PeteyPab\_22 (EN), PhinkBoden\_42 (CQ1), Phomeo\_34 (CR2), Pigu\_12 (FB), Pleakley\_44 (CR5), Polyuyuki\_39 (CR6), Popper\_14 (FF), PotatoChip\_23 (EN), QuinnAvery\_16 (FF), Raqqa\_13 (AY), RedRaider\_42 (CR3), Ryan\_16 (FF), Saintcarr\_15 (FF), Schism\_16 (FF), Scuba\_44 (CR5), Skitty\_12 (FQ), Skysand\_37 (CR3), Smoothie\_43 (CQ1), SpeedDemon\_250 (DL), StarStruck\_36 (CR2), Stickynote\_25 (EN), Sukkupi\_37 (CR4), SuperSulley\_36 (CR2), ToastyOats\_18 (FF), Toniann\_42 (CQ1), Toodles\_17 (FF), Towmatter\_22 (DL), Tracker\_35 (CR2), Turuncu\_39 (CR1), Wheezy\_35 (CR2), WhoseManz\_37 (CR4), WilliamBoone\_42 (CQ1), Yndexa\_37 (CR4), Yonex\_16 (FF), Yvonnetastic\_39 (DD), Zaheer\_16 (FF), Zion\_23 (EN), Zucker\_14 (FN),

Start 10:

- Found in 5 of 147 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 2 of 120
- Called 40.0% of time when present
- Phage (with cluster) where this start called: CocoCinnamon\_16 (FO), Scotia\_14 (FO),

### Summary by clusters:

There are 21 clusters represented in this pham: CR2, CR3, KA, EN, CR6, CR7, CR4, CR5, DL, DD, FQ, singleton, FB, CR1, DZ, FF, AY, CQ2, CQ1, FN, FO,

Info for manual annotations of cluster AY:

- Start number 9 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster CQ1:

- Start number 9 was manually annotated 15 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 9 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster CR1:

- Start number 9 was manually annotated 3 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 9 was manually annotated 21 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 9 was manually annotated 6 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 9 was manually annotated 8 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 9 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CR6:

- Start number 9 was manually annotated 6 times for cluster CR6.

Info for manual annotations of cluster CR7:

- Start number 9 was manually annotated 1 time for cluster CR7.

Info for manual annotations of cluster DD:

- Start number 9 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DL:

- Start number 9 was manually annotated 6 times for cluster DL.

Info for manual annotations of cluster DZ:

- Start number 8 was manually annotated 5 times for cluster DZ.

Info for manual annotations of cluster EN:

- Start number 9 was manually annotated 8 times for cluster EN.

Info for manual annotations of cluster FB:

- Start number 9 was manually annotated 3 times for cluster FB.

Info for manual annotations of cluster FF:

- Start number 9 was manually annotated 17 times for cluster FF.

Info for manual annotations of cluster FN:

- Start number 9 was manually annotated 3 times for cluster FN.

Info for manual annotations of cluster FO:

- Start number 7 was manually annotated 3 times for cluster FO.
- Start number 9 was manually annotated 2 times for cluster FO.
- Start number 10 was manually annotated 2 times for cluster FO.

Info for manual annotations of cluster FQ:

- Start number 9 was manually annotated 2 times for cluster FQ.

Info for manual annotations of cluster KA:

- Start number 8 was manually annotated 1 time for cluster KA.

**Gene Information:**

Gene: AbbyDaisy\_13 Start: 7857, Stop: 8522, Start Num: 9

Candidate Starts for AbbyDaisy\_13:

(Start: 9 @7857 has 109 MA's), (23, 7950), (38, 8064), (45, 8127), (48, 8145), (52, 8175), (64, 8265), (76, 8349), (80, 8397), (84, 8421), (88, 8451), (91, 8463),

Gene: Abscondus\_41 Start: 17642, Stop: 18307, Start Num: 9

Candidate Starts for Abscondus\_41:

(Start: 9 @17642 has 109 MA's), (24, 17732), (71, 18089),

Gene: Alatato\_11 Start: 7604, Stop: 8251, Start Num: 9

Candidate Starts for Alatato\_11:

(Start: 9 @7604 has 109 MA's), (16, 7664), (27, 7715), (30, 7736), (34, 7766), (50, 7892), (52, 7913), (53, 7916), (74, 8063), (97, 8228),

Gene: Aleemily\_13 Start: 8905, Stop: 9573, Start Num: 8

Candidate Starts for Aleemily\_13:

(Start: 8 @8905 has 6 MA's), (63, 9307), (75, 9388), (80, 9445), (92, 9526), (97, 9547),

Gene: AllBusiness\_15 Start: 9307, Stop: 9975, Start Num: 9

Candidate Starts for AllBusiness\_15:

(Start: 9 @9307 has 109 MA's), (28, 9442), (40, 9529), (48, 9595), (64, 9715), (86, 9886), (88, 9901),

Gene: Aoka\_13 Start: 9111, Stop: 9773, Start Num: 7

Candidate Starts for Aoka\_13:

(Start: 7 @9111 has 3 MA's), (16, 9177), (34, 9282), (50, 9408), (53, 9432), (74, 9579), (97, 9744),

Gene: Aphelion\_42 Start: 17911, Stop: 18576, Start Num: 9

Candidate Starts for Aphelion\_42:

(Start: 9 @17911 has 109 MA's), (24, 18001), (71, 18358), (88, 18511),

Gene: Apiary\_39 Start: 23228, Stop: 23896, Start Num: 9

Candidate Starts for Apiary\_39:

(Start: 9 @23228 has 109 MA's), (21, 23309), (30, 23366), (40, 23450), (54, 23552), (55, 23564), (67, 23651), (75, 23708), (82, 23777), (83, 23783), (85, 23795), (96, 23861), (97, 23867),

Gene: ArV2\_11 Start: 7388, Stop: 8074, Start Num: 4

Candidate Starts for ArV2\_11:

(4, 7388), (6, 7394), (Start: 9 @7409 has 109 MA's), (13, 7454), (20, 7487), (34, 7580), (40, 7631), (45, 7679), (47, 7691), (48, 7697), (52, 7727), (61, 7793), (68, 7838), (76, 7901), (84, 7973), (88, 8003), (91, 8015), (93, 8033),

Gene: Arti\_35 Start: 21382, Stop: 22065, Start Num: 9

Candidate Starts for Arti\_35:

(Start: 9 @21382 has 109 MA's), (11, 21400), (27, 21493), (36, 21580), (37, 21583), (54, 21715), (67, 21814), (75, 21871), (82, 21940), (87, 21970), (90, 21991), (97, 22030),

Gene: Bachita\_44 Start: 18344, Stop: 19009, Start Num: 9

Candidate Starts for Bachita\_44:

(Start: 9 @18344 has 109 MA's), (24, 18434), (71, 18791), (88, 18944),

Gene: Bantam\_24 Start: 15333, Stop: 15989, Start Num: 9

Candidate Starts for Bantam\_24:

(3, 15276), (Start: 9 @15333 has 109 MA's), (14, 15384), (18, 15399), (57, 15678),

Gene: Bauer\_15 Start: 9233, Stop: 9898, Start Num: 9

Candidate Starts for Bauer\_15:

(Start: 9 @9233 has 109 MA's), (13, 9278), (19, 9308), (34, 9401), (35, 9404), (39, 9443), (44, 9494), (61, 9614), (88, 9824), (93, 9854),

Gene: BellaJr\_15 Start: 9265, Stop: 9927, Start Num: 9

Candidate Starts for BellaJr\_15:

(Start: 9 @9265 has 109 MA's), (17, 9334), (21, 9352), (23, 9358), (40, 9487), (47, 9547), (52, 9583), (57, 9619), (59, 9631), (64, 9670), (76, 9754), (87, 9844),

Gene: BiPauneto\_38 Start: 21225, Stop: 21905, Start Num: 9

Candidate Starts for BiPauneto\_38:

(Start: 9 @21225 has 109 MA's), (36, 21420), (46, 21504), (54, 21555), (67, 21654), (75, 21711), (82, 21780), (90, 21831), (97, 21870),

Gene: BigSherm\_15 Start: 9252, Stop: 9920, Start Num: 9

Candidate Starts for BigSherm\_15:

(Start: 9 @9252 has 109 MA's), (48, 9540), (64, 9660), (80, 9792), (88, 9846),

Gene: BlackSpider\_13 Start: 8260, Stop: 8922, Start Num: 9

Candidate Starts for BlackSpider\_13:

(Start: 9 @8260 has 109 MA's), (17, 8329), (21, 8347), (23, 8353), (40, 8482), (47, 8542), (52, 8578), (57, 8614), (59, 8626), (64, 8665), (73, 8725), (76, 8749),

Gene: Bonum\_38 Start: 21700, Stop: 22383, Start Num: 9

Candidate Starts for Bonum\_38:

(Start: 9 @21700 has 109 MA's), (37, 21901), (41, 21949), (54, 22033), (58, 22063), (67, 22132), (70, 22141), (75, 22189), (82, 22258), (97, 22348),

Gene: Braxoaddie\_39 Start: 23217, Stop: 23885, Start Num: 9

Candidate Starts for Braxoaddie\_39:

(Start: 9 @23217 has 109 MA's), (21, 23298), (30, 23355), (40, 23439), (54, 23541), (55, 23553), (67, 23640), (75, 23697), (82, 23766), (83, 23772), (85, 23784), (96, 23850), (97, 23856),

Gene: BrutonGaster\_30 Start: 14524, Stop: 15189, Start Num: 9

Candidate Starts for BrutonGaster\_30:

(5, 14506), (Start: 9 @14524 has 109 MA's), (40, 14755), (47, 14815), (49, 14824), (65, 14941),

Gene: Buggaboo\_36 Start: 22185, Stop: 22868, Start Num: 9

Candidate Starts for Buggaboo\_36:

(Start: 9 @22185 has 109 MA's), (37, 22386), (54, 22518), (67, 22617), (70, 22626), (75, 22674), (82, 22743), (97, 22833),

Gene: C3PO\_23 Start: 15961, Stop: 16623, Start Num: 9

Candidate Starts for C3PO\_23:

(Start: 9 @15961 has 109 MA's), (11, 15979), (21, 16042), (23, 16048), (54, 16282), (67, 16378), (75, 16435), (77, 16450), (97, 16594),

Gene: Cafasso\_13 Start: 8905, Stop: 9573, Start Num: 8

Candidate Starts for Cafasso\_13:

(Start: 8 @8905 has 6 MA's), (63, 9307), (75, 9388), (80, 9445), (92, 9526), (97, 9547),

Gene: Cardigan\_41 Start: 19485, Stop: 20150, Start Num: 9

Candidate Starts for Cardigan\_41:

(Start: 9 @19485 has 109 MA's), (25, 19578), (33, 19647), (57, 19836), (60, 19863), (85, 20052),

Gene: Cassini\_13 Start: 8229, Stop: 8891, Start Num: 9

Candidate Starts for Cassini\_13:

(Start: 9 @8229 has 109 MA's), (17, 8298), (21, 8316), (23, 8322), (40, 8451), (47, 8511), (52, 8547), (57, 8583), (59, 8595), (64, 8634), (76, 8718),

Gene: ChewyVIII\_49 Start: 28800, Stop: 29486, Start Num: 9

Candidate Starts for ChewyVIII\_49:

(Start: 9 @28800 has 109 MA's), (20, 28875), (46, 29088), (54, 29139), (67, 29238), (74, 29283), (75, 29295), (82, 29364), (83, 29370), (97, 29454), (100, 29472),

Gene: ClubL\_42 Start: 17833, Stop: 18498, Start Num: 9

Candidate Starts for ClubL\_42:

(Start: 9 @17833 has 109 MA's), (24, 17923), (71, 18280), (88, 18433),

Gene: CocoCinnamon\_16 Start: 9349, Stop: 9993, Start Num: 10

Candidate Starts for CocoCinnamon\_16:

(Start: 9 @9346 has 109 MA's), (Start: 10 @9349 has 2 MA's), (16, 9406), (27, 9457), (30, 9478), (50, 9634), (53, 9658), (56, 9682), (64, 9742), (67, 9760), (97, 9970),

Gene: CoffeeBean\_39 Start: 23172, Stop: 23840, Start Num: 9

Candidate Starts for CoffeeBean\_39:

(Start: 9 @23172 has 109 MA's), (21, 23253), (30, 23310), (40, 23394), (54, 23496), (55, 23508), (67, 23595), (75, 23652), (82, 23721), (83, 23727), (85, 23739), (96, 23805), (97, 23811),

Gene: Cole\_14 Start: 8911, Stop: 9579, Start Num: 9

Candidate Starts for Cole\_14:

(Start: 9 @8911 has 109 MA's), (48, 9199), (64, 9319), (80, 9451), (88, 9505),

Gene: Colossa\_14 Start: 8718, Stop: 9617, Start Num: 8

Candidate Starts for Colossa\_14:

(Start: 8 @8718 has 6 MA's), (22, 8808), (28, 8853), (75, 9195), (99, 9369), (101, 9381), (102, 9414), (103, 9492),

Gene: Commandaria\_37 Start: 22702, Stop: 23388, Start Num: 9

Candidate Starts for Commandaria\_37:

(Start: 9 @22702 has 109 MA's), (36, 22900), (37, 22903), (41, 22951), (54, 23035), (67, 23134), (75, 23191), (81, 23251), (82, 23260), (87, 23290), (90, 23311), (97, 23350),

Gene: Cruella\_23 Start: 15961, Stop: 16623, Start Num: 9

Candidate Starts for Cruella\_23:

(Start: 9 @15961 has 109 MA's), (11, 15979), (21, 16042), (23, 16048), (54, 16282), (67, 16378), (75, 16435), (77, 16450), (97, 16594),

Gene: Cucurbita\_44 Start: 19203, Stop: 19868, Start Num: 9

Candidate Starts for Cucurbita\_44:

(Start: 9 @19203 has 109 MA's), (24, 19293), (71, 19650), (88, 19803),

Gene: Culver\_42 Start: 17642, Stop: 18307, Start Num: 9  
Candidate Starts for Culver\_42:  
(Start: 9 @17642 has 109 MA's), (24, 17732), (71, 18089),

Gene: Dalilpop\_40 Start: 23693, Stop: 24376, Start Num: 9  
Candidate Starts for Dalilpop\_40:  
(Start: 9 @23693 has 109 MA's), (37, 23894), (54, 24026), (67, 24125), (72, 24164), (75, 24182), (82, 24251), (90, 24302), (97, 24341),

Gene: Daredevil\_23 Start: 13726, Stop: 14382, Start Num: 9  
Candidate Starts for Daredevil\_23:  
(3, 13669), (Start: 9 @13726 has 109 MA's), (12, 13747), (14, 13777), (47, 14002), (62, 14104), (78, 14224), (88, 14311), (89, 14314), (90, 14320),

Gene: Darwin\_26 Start: 16706, Stop: 17368, Start Num: 9  
Candidate Starts for Darwin\_26:  
(Start: 9 @16706 has 109 MA's), (11, 16724), (21, 16787), (23, 16793), (54, 17027), (67, 17123), (75, 17180), (77, 17195), (97, 17339),

Gene: DatBoi\_25 Start: 16122, Stop: 16778, Start Num: 9  
Candidate Starts for DatBoi\_25:  
(3, 16065), (Start: 9 @16122 has 109 MA's), (14, 16173), (57, 16467),

Gene: Dirdigger\_16 Start: 9229, Stop: 9897, Start Num: 9  
Candidate Starts for Dirdigger\_16:  
(Start: 9 @9229 has 109 MA's), (28, 9364), (40, 9451), (48, 9517), (64, 9637), (86, 9808), (88, 9823),

Gene: Donatella\_15 Start: 9378, Stop: 10046, Start Num: 9  
Candidate Starts for Donatella\_15:  
(Start: 9 @9378 has 109 MA's), (17, 9447), (40, 9600), (48, 9666), (64, 9786), (80, 9918), (88, 9972),

Gene: Dusty\_41 Start: 17642, Stop: 18307, Start Num: 9  
Candidate Starts for Dusty\_41:  
(Start: 9 @17642 has 109 MA's), (24, 17732), (71, 18089),

Gene: Elesar\_15 Start: 9307, Stop: 9969, Start Num: 9  
Candidate Starts for Elesar\_15:  
(Start: 9 @9307 has 109 MA's), (17, 9376), (21, 9394), (23, 9400), (43, 9568), (45, 9577), (47, 9589), (52, 9625), (76, 9796), (84, 9868), (87, 9886),

Gene: Emianna\_35 Start: 22419, Stop: 23102, Start Num: 9  
Candidate Starts for Emianna\_35:  
(Start: 9 @22419 has 109 MA's), (11, 22437), (27, 22530), (36, 22617), (37, 22620), (54, 22752), (67, 22851), (75, 22908), (82, 22977), (87, 23007), (90, 23028), (97, 23067),

Gene: Engineer\_43 Start: 17859, Stop: 18524, Start Num: 9  
Candidate Starts for Engineer\_43:  
(Start: 9 @17859 has 109 MA's), (24, 17949), (71, 18306), (88, 18459),

Gene: Ennea\_41 Start: 23023, Stop: 23706, Start Num: 9  
Candidate Starts for Ennea\_41:  
(Start: 9 @23023 has 109 MA's), (37, 23224), (54, 23356), (57, 23383), (67, 23455), (75, 23512), (82, 23581), (90, 23632), (97, 23671),

Gene: EvenBluerMoon\_13 Start: 9146, Stop: 9808, Start Num: 7

Candidate Starts for EvenBluerMoon\_13:

(Start: 7 @9146 has 3 MA's), (16, 9212), (29, 9284), (34, 9317), (50, 9443), (53, 9467), (97, 9779),

Gene: Flapper\_39 Start: 22775, Stop: 23458, Start Num: 9

Candidate Starts for Flapper\_39:

(Start: 9 @22775 has 109 MA's), (37, 22976), (41, 23024), (54, 23108), (67, 23207), (72, 23246), (75, 23264), (82, 23333), (90, 23384), (97, 23423),

Gene: Float294\_37 Start: 22462, Stop: 23145, Start Num: 9

Candidate Starts for Float294\_37:

(Start: 9 @22462 has 109 MA's), (37, 22663), (54, 22795), (57, 22822), (67, 22894), (75, 22951), (82, 23020), (90, 23071), (97, 23110),

Gene: Foxboro\_36 Start: 22925, Stop: 23608, Start Num: 9

Candidate Starts for Foxboro\_36:

(Start: 9 @22925 has 109 MA's), (11, 22943), (27, 23036), (36, 23123), (37, 23126), (54, 23258), (67, 23357), (75, 23414), (82, 23483), (87, 23513), (90, 23534), (97, 23573),

Gene: Fury\_44 Start: 22072, Stop: 22755, Start Num: 9

Candidate Starts for Fury\_44:

(Start: 9 @22072 has 109 MA's), (37, 22273), (46, 22354), (53, 22399), (54, 22405), (55, 22417), (67, 22504), (75, 22561), (82, 22630), (90, 22681), (95, 22711), (97, 22720),

Gene: GRU1\_25 Start: 14660, Stop: 15343, Start Num: 9

Candidate Starts for GRU1\_25:

(Start: 9 @14660 has 109 MA's), (37, 14861), (54, 14993), (67, 15092), (72, 15131), (75, 15149), (82, 15218), (90, 15269), (97, 15308),

Gene: GTE5\_26 Start: 15663, Stop: 16346, Start Num: 9

Candidate Starts for GTE5\_26:

(Start: 9 @15663 has 109 MA's), (37, 15864), (54, 15996), (67, 16095), (72, 16134), (75, 16152), (82, 16221), (90, 16272), (97, 16311),

Gene: GTE8\_24 Start: 15678, Stop: 16361, Start Num: 9

Candidate Starts for GTE8\_24:

(Start: 9 @15678 has 109 MA's), (11, 15696), (54, 16011), (57, 16038), (67, 16110), (75, 16167), (82, 16236), (87, 16266), (88, 16278), (90, 16287), (97, 16326),

Gene: Gagieri\_39 Start: 23053, Stop: 23721, Start Num: 9

Candidate Starts for Gagieri\_39:

(Start: 9 @23053 has 109 MA's), (21, 23134), (24, 23143), (40, 23275), (54, 23377), (55, 23389), (67, 23476), (75, 23533), (82, 23602), (83, 23608), (85, 23620), (97, 23692),

Gene: Gallia\_31 Start: 19628, Stop: 20296, Start Num: 9

Candidate Starts for Gallia\_31:

(Start: 9 @19628 has 109 MA's), (26, 19736), (36, 19814), (42, 19880), (49, 19916), (61, 20003), (75, 20102), (82, 20171), (97, 20261),

Gene: Geeche\_41 Start: 17733, Stop: 18398, Start Num: 9

Candidate Starts for Geeche\_41:

(Start: 9 @17733 has 109 MA's), (24, 17823), (71, 18180), (88, 18333),

Gene: GoodLuckBabe\_16 Start: 9206, Stop: 9874, Start Num: 9

Candidate Starts for GoodLuckBabe\_16:

(Start: 9 @9206 has 109 MA's), (40, 9428), (48, 9494), (57, 9560), (64, 9614), (88, 9800),

Gene: GrootJr\_37 Start: 21777, Stop: 22460, Start Num: 9

Candidate Starts for GrootJr\_37:

(Start: 9 @21777 has 109 MA's), (11, 21795), (27, 21888), (36, 21975), (37, 21978), (54, 22110), (67, 22209), (75, 22266), (82, 22335), (87, 22365), (90, 22386), (97, 22425),

Gene: Guinevere\_16 Start: 9237, Stop: 9905, Start Num: 9

Candidate Starts for Guinevere\_16:

(Start: 9 @9237 has 109 MA's), (17, 9306), (40, 9459), (48, 9525), (64, 9645), (80, 9777), (88, 9831),

Gene: Gusanita\_14 Start: 9128, Stop: 9796, Start Num: 9

Candidate Starts for Gusanita\_14:

(Start: 9 @9128 has 109 MA's), (28, 9263), (40, 9350), (48, 9416), (64, 9536), (86, 9707), (88, 9722),

Gene: Halloweekend\_14 Start: 8878, Stop: 9546, Start Num: 9

Candidate Starts for Halloweekend\_14:

(Start: 9 @8878 has 109 MA's), (40, 9100), (48, 9166), (64, 9286), (80, 9418), (88, 9472),

Gene: Hereford\_21 Start: 9291, Stop: 9953, Start Num: 7

Candidate Starts for Hereford\_21:

(Start: 7 @9291 has 3 MA's), (16, 9357), (34, 9462), (50, 9588), (53, 9612), (97, 9924),

Gene: HomeFry\_41 Start: 20719, Stop: 21402, Start Num: 9

Candidate Starts for HomeFry\_41:

(1, 20545), (2, 20638), (Start: 9 @20719 has 109 MA's), (37, 20920), (46, 21001), (53, 21046), (54, 21052), (55, 21064), (67, 21151), (75, 21208), (82, 21277), (85, 21295), (88, 21319), (90, 21328), (95, 21358), (97, 21367),

Gene: HubbaBubba\_33 Start: 18243, Stop: 18923, Start Num: 9

Candidate Starts for HubbaBubba\_33:

(Start: 9 @18243 has 109 MA's), (36, 18438), (46, 18522), (54, 18573), (57, 18600), (67, 18672), (75, 18729), (82, 18798), (90, 18849), (97, 18888),

Gene: IDyn\_36 Start: 19639, Stop: 20319, Start Num: 9

Candidate Starts for IDyn\_36:

(Start: 9 @19639 has 109 MA's), (36, 19834), (46, 19918), (54, 19969), (67, 20068), (75, 20125), (82, 20194), (90, 20245), (97, 20284),

Gene: Ichiang\_14 Start: 8893, Stop: 9561, Start Num: 9

Candidate Starts for Ichiang\_14:

(Start: 9 @8893 has 109 MA's), (17, 8962), (40, 9115), (48, 9181), (64, 9301), (88, 9487),

Gene: IsHungry\_16 Start: 9202, Stop: 9870, Start Num: 9

Candidate Starts for IsHungry\_16:

(Start: 9 @9202 has 109 MA's), (28, 9337), (40, 9424), (48, 9490), (64, 9610), (86, 9781), (88, 9796),

Gene: Jifall16\_34 Start: 22046, Stop: 22729, Start Num: 9

Candidate Starts for Jifall16\_34:

(Start: 9 @22046 has 109 MA's), (11, 22064), (27, 22157), (36, 22244), (37, 22247), (54, 22379), (67, 22478), (75, 22535), (82, 22604), (87, 22634), (90, 22655), (97, 22694),

Gene: JonJames\_41 Start: 21700, Stop: 22365, Start Num: 9

Candidate Starts for JonJames\_41:

(Start: 9 @21700 has 109 MA's), (25, 21793), (33, 21862), (57, 22051), (60, 22078), (85, 22267),

Gene: Julie\_16 Start: 9465, Stop: 10133, Start Num: 9

Candidate Starts for Julie\_16:

(Start: 9 @9465 has 109 MA's), (28, 9600), (40, 9687), (48, 9753), (64, 9873), (86, 10044),

Gene: Kabluna\_38 Start: 21100, Stop: 21783, Start Num: 9

Candidate Starts for Kabluna\_38:

(Start: 9 @21100 has 109 MA's), (37, 21301), (41, 21349), (54, 21433), (67, 21532), (75, 21589), (82, 21658), (97, 21748),

Gene: KidneyBean\_35 Start: 22194, Stop: 22877, Start Num: 9

Candidate Starts for KidneyBean\_35:

(Start: 9 @22194 has 109 MA's), (11, 22212), (27, 22305), (37, 22395), (54, 22527), (67, 22626), (75, 22683), (82, 22752), (87, 22782), (90, 22803), (97, 22842),

Gene: Kihatsu\_17 Start: 9559, Stop: 10227, Start Num: 9

Candidate Starts for Kihatsu\_17:

(Start: 9 @9559 has 109 MA's), (48, 9847), (64, 9967), (80, 10099), (88, 10153),

Gene: Kimchi1738\_23 Start: 15559, Stop: 16221, Start Num: 9

Candidate Starts for Kimchi1738\_23:

(Start: 9 @15559 has 109 MA's), (11, 15577), (21, 15640), (23, 15646), (54, 15880), (67, 15976), (75, 16033), (77, 16048), (97, 16192),

Gene: Kumotta\_13 Start: 8849, Stop: 9499, Start Num: 9

Candidate Starts for Kumotta\_13:

(Start: 9 @8849 has 109 MA's), (16, 8909), (20, 8921), (32, 8999), (44, 9107), (50, 9137), (53, 9161), (56, 9185), (57, 9194), (74, 9308), (97, 9473),

Gene: Kurt\_35 Start: 22434, Stop: 23117, Start Num: 9

Candidate Starts for Kurt\_35:

(Start: 9 @22434 has 109 MA's), (11, 22452), (27, 22545), (36, 22632), (37, 22635), (54, 22767), (67, 22866), (75, 22923), (82, 22992), (87, 23022), (90, 23043), (97, 23082),

Gene: Lenoxika\_16 Start: 9239, Stop: 9907, Start Num: 9

Candidate Starts for Lenoxika\_16:

(Start: 9 @9239 has 109 MA's), (17, 9308), (40, 9461), (48, 9527), (64, 9647), (80, 9779), (88, 9833),

Gene: Lollipop1437\_40 Start: 23011, Stop: 23694, Start Num: 9

Candidate Starts for Lollipop1437\_40:

(Start: 9 @23011 has 109 MA's), (37, 23212), (54, 23344), (57, 23371), (67, 23443), (75, 23500), (82, 23569), (90, 23620), (97, 23659),

Gene: Lozinak\_42 Start: 17914, Stop: 18579, Start Num: 9

Candidate Starts for Lozinak\_42:

(Start: 9 @17914 has 109 MA's), (24, 18004), (71, 18361), (88, 18514),

Gene: MacGully\_43 Start: 23224, Stop: 23904, Start Num: 9

Candidate Starts for MacGully\_43:

(Start: 9 @23224 has 109 MA's), (13, 23263), (21, 23305), (40, 23449), (54, 23551), (55, 23563), (57, 23578), (67, 23650), (75, 23707), (79, 23746), (82, 23776), (85, 23794), (86, 23803), (88, 23818), (97, 23866), (98, 23878),

Gene: Maja\_12 Start: 8474, Stop: 9121, Start Num: 9

Candidate Starts for Maja\_12:

(Start: 9 @8474 has 109 MA's), (Start: 10 @8477 has 2 MA's), (16, 8534), (21, 8555), (27, 8585), (33, 8630), (50, 8762), (53, 8786), (64, 8870), (97, 9098),

Gene: MargaretKali\_13 Start: 8484, Stop: 9134, Start Num: 9

Candidate Starts for MargaretKali\_13:

(Start: 9 @8484 has 109 MA's), (29, 8613), (31, 8619), (34, 8646), (47, 8760), (50, 8772), (53, 8796), (56, 8820), (57, 8829), (74, 8943), (80, 9012), (83, 9030), (92, 9093), (97, 9108),

Gene: Marietta\_37 Start: 19554, Stop: 20234, Start Num: 9

Candidate Starts for Marietta\_37:

(1, 19380), (Start: 9 @19554 has 109 MA's), (36, 19752), (54, 19887), (67, 19986), (72, 20025), (75, 20043), (81, 20103), (82, 20112), (90, 20163), (97, 20202), (98, 20214),

Gene: Maselop\_39 Start: 23248, Stop: 23916, Start Num: 9

Candidate Starts for Maselop\_39:

(Start: 9 @23248 has 109 MA's), (21, 23329), (30, 23386), (40, 23470), (54, 23572), (55, 23584), (67, 23671), (75, 23728), (82, 23797), (83, 23803), (85, 23815), (96, 23881), (97, 23887),

Gene: MerCougar\_36 Start: 22307, Stop: 22990, Start Num: 9

Candidate Starts for MerCougar\_36:

(Start: 9 @22307 has 109 MA's), (37, 22508), (54, 22640), (67, 22739), (70, 22748), (75, 22796), (82, 22865), (97, 22955),

Gene: Merpity\_13 Start: 7019, Stop: 7681, Start Num: 9

Candidate Starts for Merpity\_13:

(Start: 9 @7019 has 109 MA's), (17, 7088), (21, 7106), (23, 7112), (40, 7241), (47, 7301), (52, 7337), (57, 7373), (59, 7385), (64, 7424), (76, 7508),

Gene: MillySue\_16 Start: 9251, Stop: 9919, Start Num: 9

Candidate Starts for MillySue\_16:

(Start: 9 @9251 has 109 MA's), (28, 9386), (40, 9473), (48, 9539), (64, 9659), (88, 9845),

Gene: Miskis\_40 Start: 17677, Stop: 18342, Start Num: 9

Candidate Starts for Miskis\_40:

(Start: 9 @17677 has 109 MA's), (24, 17767), (71, 18124),

Gene: ModicumRichard\_13 Start: 8905, Stop: 9573, Start Num: 8

Candidate Starts for ModicumRichard\_13:

(Start: 8 @8905 has 6 MA's), (63, 9307), (75, 9388), (80, 9445), (92, 9526), (97, 9547),

Gene: Mollymur\_25 Start: 16148, Stop: 16804, Start Num: 9

Candidate Starts for Mollymur\_25:

(Start: 9 @16148 has 109 MA's), (15, 16202), (18, 16214), (35, 16313), (60, 16520), (65, 16550), (66, 16553),

Gene: Morgana\_13 Start: 8909, Stop: 9580, Start Num: 8

Candidate Starts for Morgana\_13:

(Start: 8 @8909 has 6 MA's), (63, 9311), (75, 9392), (80, 9449), (92, 9530), (97, 9551),

Gene: MrSmee\_12 Start: 7019, Stop: 7681, Start Num: 9

Candidate Starts for MrSmee\_12:

(Start: 9 @7019 has 109 MA's), (17, 7088), (21, 7106), (23, 7112), (40, 7241), (47, 7301), (52, 7337), (57, 7373), (59, 7385), (64, 7424), (76, 7508),

Gene: NadineRae\_35 Start: 18802, Stop: 19482, Start Num: 9

Candidate Starts for NadineRae\_35:

(Start: 9 @18802 has 109 MA's), (36, 18997), (46, 19081), (54, 19132), (67, 19231), (75, 19288), (82, 19357), (90, 19408), (97, 19447),

Gene: Nandita\_16 Start: 9237, Stop: 9905, Start Num: 9

Candidate Starts for Nandita\_16:

(Start: 9 @9237 has 109 MA's), (17, 9306), (40, 9459), (48, 9525), (64, 9645), (80, 9777), (88, 9831),

Gene: NatB6\_35 Start: 21443, Stop: 22126, Start Num: 9

Candidate Starts for NatB6\_35:

(Start: 9 @21443 has 109 MA's), (11, 21461), (27, 21554), (36, 21641), (37, 21644), (54, 21776), (67, 21875), (75, 21932), (82, 22001), (87, 22031), (90, 22052), (97, 22091),

Gene: NoSwimming\_14 Start: 10095, Stop: 10754, Start Num: 9

Candidate Starts for NoSwimming\_14:

(Start: 9 @10095 has 109 MA's), (Start: 10 @10098 has 2 MA's), (16, 10155), (34, 10260), (50, 10386), (53, 10410), (54, 10416), (94, 10716), (97, 10722), (99, 10740),

Gene: Norvs\_43 Start: 17916, Stop: 18581, Start Num: 9

Candidate Starts for Norvs\_43:

(Start: 9 @17916 has 109 MA's), (24, 18006), (71, 18363), (88, 18516),

Gene: NosilaM\_38 Start: 21997, Stop: 22680, Start Num: 9

Candidate Starts for NosilaM\_38:

(Start: 9 @21997 has 109 MA's), (37, 22198), (41, 22246), (54, 22330), (67, 22429), (75, 22486), (82, 22555), (97, 22645),

Gene: NovumRegina\_35 Start: 21776, Stop: 22459, Start Num: 9

Candidate Starts for NovumRegina\_35:

(Start: 9 @21776 has 109 MA's), (11, 21794), (27, 21887), (36, 21974), (37, 21977), (54, 22109), (67, 22208), (75, 22265), (82, 22334), (87, 22364), (90, 22385), (97, 22424),

Gene: ObLaDi\_13 Start: 8905, Stop: 9573, Start Num: 8

Candidate Starts for ObLaDi\_13:

(Start: 8 @8905 has 6 MA's), (63, 9307), (75, 9388), (80, 9445), (92, 9526), (97, 9547),

Gene: OneUp\_36 Start: 15613, Stop: 16278, Start Num: 9

Candidate Starts for OneUp\_36:

(5, 15595), (Start: 9 @15613 has 109 MA's), (40, 15844), (47, 15904), (49, 15913), (65, 16030),

Gene: Outis\_36 Start: 22001, Stop: 22684, Start Num: 9

Candidate Starts for Outis\_36:

(Start: 9 @22001 has 109 MA's), (37, 22202), (54, 22334), (67, 22433), (70, 22442), (75, 22490), (82, 22559), (97, 22649),

Gene: P1201\_38 Start: 22813, Stop: 23490, Start Num: 9

Candidate Starts for P1201\_38:

(Start: 9 @22813 has 109 MA's), (26, 22921), (28, 22942), (36, 22999), (42, 23065), (49, 23101), (61, 23188), (75, 23287), (82, 23356), (97, 23446),

Gene: Patio\_38 Start: 22247, Stop: 22930, Start Num: 9

Candidate Starts for Patio\_38:

(Start: 9 @22247 has 109 MA's), (37, 22448), (54, 22580), (57, 22607), (67, 22679), (75, 22736), (82, 22805), (90, 22856), (97, 22895),

Gene: Pemberton\_38 Start: 19542, Stop: 20222, Start Num: 9

Candidate Starts for Pemberton\_38:

(Start: 9 @19542 has 109 MA's), (36, 19737), (46, 19821), (54, 19872), (67, 19971), (75, 20028), (82, 20097), (90, 20148), (97, 20187),

Gene: PeteyPab\_22 Start: 15926, Stop: 16588, Start Num: 9

Candidate Starts for PeteyPab\_22:

(Start: 9 @15926 has 109 MA's), (11, 15944), (21, 16007), (23, 16013), (54, 16247), (67, 16343), (75, 16400), (77, 16415), (97, 16559),

Gene: PhinkBoden\_42 Start: 18297, Stop: 18962, Start Num: 9

Candidate Starts for PhinkBoden\_42:

(Start: 9 @18297 has 109 MA's), (24, 18387), (71, 18744), (88, 18897),

Gene: Phomeo\_34 Start: 22069, Stop: 22752, Start Num: 9

Candidate Starts for Phomeo\_34:

(Start: 9 @22069 has 109 MA's), (11, 22087), (27, 22180), (36, 22267), (37, 22270), (54, 22402), (67, 22501), (75, 22558), (82, 22627), (87, 22657), (90, 22678), (97, 22717),

Gene: Pigu\_12 Start: 7560, Stop: 8207, Start Num: 9

Candidate Starts for Pigu\_12:

(Start: 9 @7560 has 109 MA's), (Start: 10 @7563 has 2 MA's), (16, 7620), (27, 7671), (30, 7692), (46, 7827), (50, 7848), (53, 7872), (57, 7905), (67, 7974), (97, 8184),

Gene: Pleakley\_44 Start: 22073, Stop: 22756, Start Num: 9

Candidate Starts for Pleakley\_44:

(Start: 9 @22073 has 109 MA's), (37, 22274), (46, 22355), (53, 22400), (54, 22406), (55, 22418), (67, 22505), (75, 22562), (82, 22631), (90, 22682), (95, 22712), (97, 22721),

Gene: Polyzuki\_39 Start: 23240, Stop: 23908, Start Num: 9

Candidate Starts for Polyzuki\_39:

(Start: 9 @23240 has 109 MA's), (21, 23321), (30, 23378), (40, 23462), (54, 23564), (55, 23576), (67, 23663), (75, 23720), (82, 23789), (83, 23795), (85, 23807), (96, 23873), (97, 23879),

Gene: Popper\_14 Start: 8768, Stop: 9433, Start Num: 9

Candidate Starts for Popper\_14:

(Start: 9 @8768 has 109 MA's), (40, 8990), (45, 9038), (47, 9050), (48, 9056), (52, 9086), (64, 9176), (74, 9239), (77, 9266), (88, 9362),

Gene: PotatoChip\_23 Start: 15928, Stop: 16590, Start Num: 9

Candidate Starts for PotatoChip\_23:

(Start: 9 @15928 has 109 MA's), (11, 15946), (21, 16009), (23, 16015), (54, 16249), (67, 16345), (75, 16402), (77, 16417), (97, 16561),

Gene: PrairieDogTown\_13 Start: 9148, Stop: 9810, Start Num: 7

Candidate Starts for PrairieDogTown\_13:

(Start: 7 @9148 has 3 MA's), (16, 9214), (29, 9286), (34, 9319), (50, 9445), (53, 9469), (97, 9781),

Gene: QuinnAvery\_16 Start: 9252, Stop: 9920, Start Num: 9

Candidate Starts for QuinnAvery\_16:

(Start: 9 @9252 has 109 MA's), (48, 9540), (64, 9660), (80, 9792), (88, 9846),

Gene: Raqqa\_13 Start: 8165, Stop: 8830, Start Num: 9

Candidate Starts for Raqqa\_13:

(Start: 9 @8165 has 109 MA's), (19, 8240), (23, 8258), (28, 8300), (38, 8372), (40, 8387), (48, 8453), (51, 8462), (52, 8483), (69, 8597), (76, 8657),

Gene: RedRaider\_42 Start: 24251, Stop: 24934, Start Num: 9

Candidate Starts for RedRaider\_42:

(Start: 9 @24251 has 109 MA's), (37, 24452), (54, 24584), (57, 24611), (67, 24683), (75, 24740), (82, 24809), (90, 24860), (97, 24899),

Gene: Ryan\_16 Start: 9383, Stop: 10051, Start Num: 9

Candidate Starts for Ryan\_16:

(Start: 9 @9383 has 109 MA's), (40, 9605), (48, 9671), (64, 9791), (80, 9923), (88, 9977),

Gene: Saintcarr\_15 Start: 9257, Stop: 9925, Start Num: 9

Candidate Starts for Saintcarr\_15:

(Start: 9 @9257 has 109 MA's), (17, 9326), (40, 9479), (48, 9545), (64, 9665), (80, 9797), (88, 9851),

Gene: Schism\_16 Start: 9237, Stop: 9905, Start Num: 9

Candidate Starts for Schism\_16:

(Start: 9 @9237 has 109 MA's), (17, 9306), (40, 9459), (48, 9525), (64, 9645), (80, 9777), (88, 9831),

Gene: Scotia\_14 Start: 10104, Stop: 10754, Start Num: 10

Candidate Starts for Scotia\_14:

(Start: 9 @10101 has 109 MA's), (Start: 10 @10104 has 2 MA's), (16, 10161), (34, 10266), (50, 10392), (53, 10416), (54, 10422), (97, 10728),

Gene: Scuba\_44 Start: 22163, Stop: 22846, Start Num: 9

Candidate Starts for Scuba\_44:

(Start: 9 @22163 has 109 MA's), (37, 22364), (46, 22445), (53, 22490), (54, 22496), (55, 22508), (67, 22595), (75, 22652), (82, 22721), (90, 22772), (95, 22802), (97, 22811),

Gene: Skitty\_12 Start: 7019, Stop: 7681, Start Num: 9

Candidate Starts for Skitty\_12:

(Start: 9 @7019 has 109 MA's), (17, 7088), (21, 7106), (23, 7112), (40, 7241), (47, 7301), (52, 7337), (57, 7373), (59, 7385), (64, 7424), (76, 7508),

Gene: Skysand\_37 Start: 22464, Stop: 23147, Start Num: 9

Candidate Starts for Skysand\_37:

(Start: 9 @22464 has 109 MA's), (37, 22665), (54, 22797), (57, 22824), (67, 22896), (75, 22953), (82, 23022), (90, 23073), (97, 23112),

Gene: Smoothie\_43 Start: 17914, Stop: 18579, Start Num: 9  
Candidate Starts for Smoothie\_43:  
(Start: 9 @17914 has 109 MA's), (24, 18004), (71, 18361), (88, 18514),

Gene: SpeedDemon\_250 Start: 15649, Stop: 16305, Start Num: 9  
Candidate Starts for SpeedDemon\_250:  
(3, 15592), (Start: 9 @15649 has 109 MA's), (14, 15700), (18, 15715), (57, 15994),

Gene: StarStruck\_36 Start: 22001, Stop: 22684, Start Num: 9  
Candidate Starts for StarStruck\_36:  
(Start: 9 @22001 has 109 MA's), (37, 22202), (54, 22334), (67, 22433), (70, 22442), (75, 22490), (82, 22559), (97, 22649),

Gene: Stickynote\_25 Start: 16738, Stop: 17400, Start Num: 9  
Candidate Starts for Stickynote\_25:  
(Start: 9 @16738 has 109 MA's), (11, 16756), (21, 16819), (23, 16825), (54, 17059), (67, 17155), (75, 17212), (77, 17227), (97, 17371),

Gene: Sukkupi\_37 Start: 21116, Stop: 21796, Start Num: 9  
Candidate Starts for Sukkupi\_37:  
(Start: 9 @21116 has 109 MA's), (36, 21311), (46, 21395), (54, 21446), (67, 21545), (75, 21602), (82, 21671), (90, 21722), (97, 21761),

Gene: SuperSulley\_36 Start: 22185, Stop: 22868, Start Num: 9  
Candidate Starts for SuperSulley\_36:  
(Start: 9 @22185 has 109 MA's), (37, 22386), (54, 22518), (67, 22617), (70, 22626), (75, 22674), (82, 22743), (97, 22833),

Gene: ToastyOats\_18 Start: 9715, Stop: 10383, Start Num: 9  
Candidate Starts for ToastyOats\_18:  
(Start: 9 @9715 has 109 MA's), (48, 10003), (64, 10123), (80, 10255), (88, 10309),

Gene: Toniann\_42 Start: 17859, Stop: 18524, Start Num: 9  
Candidate Starts for Toniann\_42:  
(Start: 9 @17859 has 109 MA's), (24, 17949), (71, 18306), (88, 18459),

Gene: Toodles\_17 Start: 9447, Stop: 10112, Start Num: 9  
Candidate Starts for Toodles\_17:  
(Start: 9 @9447 has 109 MA's), (32, 9606), (45, 9717), (48, 9735), (64, 9855), (86, 10026), (88, 10041),

Gene: Towmatter\_22 Start: 13548, Stop: 14204, Start Num: 9  
Candidate Starts for Towmatter\_22:  
(3, 13491), (Start: 9 @13548 has 109 MA's), (12, 13569), (14, 13599), (47, 13824), (62, 13926), (78, 14046), (88, 14133), (89, 14136), (90, 14142),

Gene: Tracker\_35 Start: 21197, Stop: 21880, Start Num: 9  
Candidate Starts for Tracker\_35:  
(Start: 9 @21197 has 109 MA's), (11, 21215), (27, 21308), (36, 21395), (37, 21398), (54, 21530), (67, 21629), (75, 21686), (82, 21755), (87, 21785), (90, 21806), (97, 21845),

Gene: Turuncu\_39 Start: 22468, Stop: 23151, Start Num: 9  
Candidate Starts for Turuncu\_39:

(Start: 9 @22468 has 109 MA's), (37, 22669), (54, 22801), (67, 22900), (72, 22939), (75, 22957), (82, 23026), (90, 23077), (97, 23116),

Gene: VanLee\_14 Start: 8706, Stop: 9605, Start Num: 8

Candidate Starts for VanLee\_14:

(Start: 8 @8706 has 6 MA's), (22, 8796), (28, 8841), (30, 8850), (75, 9183), (99, 9357), (103, 9480), (104, 9573),

Gene: Wheezy\_35 Start: 21402, Stop: 22085, Start Num: 9

Candidate Starts for Wheezy\_35:

(Start: 9 @21402 has 109 MA's), (11, 21420), (27, 21513), (36, 21600), (37, 21603), (54, 21735), (67, 21834), (75, 21891), (82, 21960), (87, 21990), (90, 22011), (97, 22050),

Gene: WhoseManz\_37 Start: 19168, Stop: 19848, Start Num: 9

Candidate Starts for WhoseManz\_37:

(Start: 9 @19168 has 109 MA's), (36, 19363), (46, 19447), (54, 19498), (57, 19525), (67, 19597), (75, 19654), (82, 19723), (90, 19774), (97, 19813),

Gene: WilliamBoone\_42 Start: 17223, Stop: 17888, Start Num: 9

Candidate Starts for WilliamBoone\_42:

(Start: 9 @17223 has 109 MA's), (49, 17523), (57, 17583), (71, 17670),

Gene: Yndexa\_37 Start: 21116, Stop: 21796, Start Num: 9

Candidate Starts for Yndexa\_37:

(Start: 9 @21116 has 109 MA's), (36, 21311), (46, 21395), (54, 21446), (67, 21545), (75, 21602), (82, 21671), (90, 21722), (97, 21761),

Gene: Yonex\_16 Start: 9383, Stop: 10051, Start Num: 9

Candidate Starts for Yonex\_16:

(Start: 9 @9383 has 109 MA's), (40, 9605), (48, 9671), (64, 9791), (80, 9923), (88, 9977),

Gene: Yvonnetastic\_39 Start: 19249, Stop: 19914, Start Num: 9

Candidate Starts for Yvonnetastic\_39:

(Start: 9 @19249 has 109 MA's), (25, 19342), (33, 19411), (57, 19600), (60, 19627), (85, 19816),

Gene: Zaheer\_16 Start: 9472, Stop: 10140, Start Num: 9

Candidate Starts for Zaheer\_16:

(Start: 9 @9472 has 109 MA's), (17, 9541), (40, 9694), (48, 9760), (64, 9880), (88, 10066),

Gene: Zion\_23 Start: 15926, Stop: 16588, Start Num: 9

Candidate Starts for Zion\_23:

(Start: 9 @15926 has 109 MA's), (11, 15944), (21, 16007), (23, 16013), (54, 16247), (67, 16343), (75, 16400), (77, 16415), (97, 16559),

Gene: Zucker\_14 Start: 8546, Stop: 9211, Start Num: 9

Candidate Starts for Zucker\_14:

(Start: 9 @8546 has 109 MA's), (13, 8591), (19, 8621), (34, 8714), (35, 8717), (39, 8756), (44, 8807), (61, 8927), (88, 9137), (93, 9167),