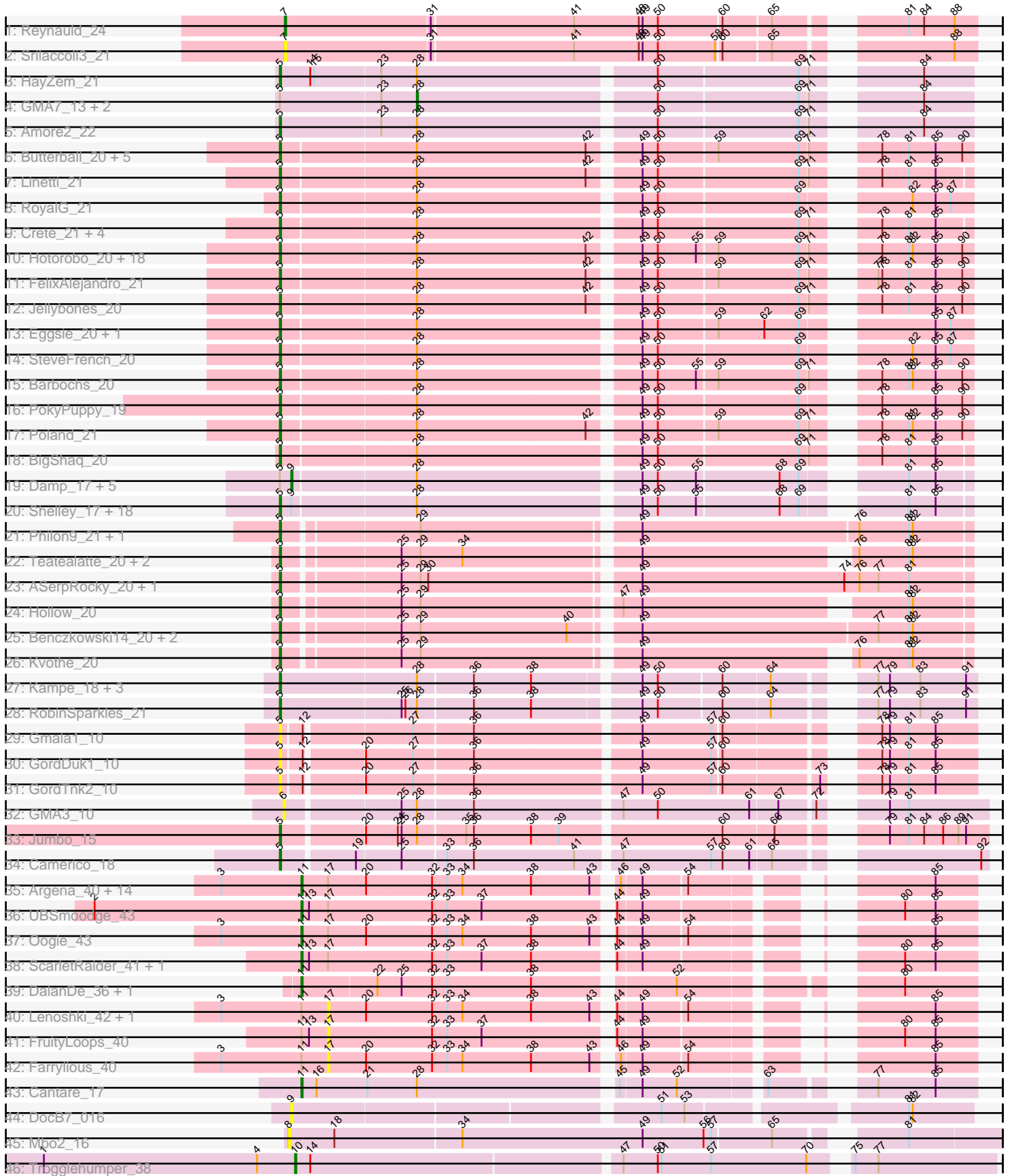


Pham 311373



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 311373 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311373 has 125 members, 27 are drafts.

Phages represented in each track:

- Track 1 : Reynauld\_24
- Track 2 : Srilaccoli3\_21
- Track 3 : HayZem\_21
- Track 4 : GMA7\_13, Austin\_22, GTE7\_13
- Track 5 : Amore2\_22
- Track 6 : Butterball\_20, Boneham\_20, CinnamonToast\_21, BillyBobJr\_21, Msay19\_21, BirksAndSocks\_20
- Track 7 : Linetti\_21
- Track 8 : RoyalG\_21
- Track 9 : Crete\_21, PierreThree\_20, Chelms\_20, BenoitCattle\_20, Dakiti\_20
- Track 10 : Hotorobo\_20, Squibbles\_20, Exiguo\_20, Flakey\_20, Monty\_19, John316\_20, Sam12\_20, Ekhein\_20, Beaver\_20, Lizzo\_20, Adgers\_21, Worcestershire\_20, Breezic\_20, GourdThymes\_20, Sombrero\_20, Gorko\_20, Kelzog\_20, CathyBurgh\_20, RemRem\_21
- Track 11 : FelixAlejandro\_21
- Track 12 : Jellybones\_20
- Track 13 : Eggsie\_20, Diabla\_19
- Track 14 : SteveFrench\_20
- Track 15 : Barbochs\_20
- Track 16 : PokyPuppy\_19
- Track 17 : Poland\_21
- Track 18 : BigShaq\_20
- Track 19 : Damp\_17, Kaseim\_17, Teal\_17, Berries\_17, GalacticEye\_17, Charianelly\_17
- Track 20 : Shelley\_17, MrWormie\_17, Anamika\_17, Neoevie\_17, Lidong\_17, Guillaume\_17, Hello\_17, Hail2Pitt\_17, Woes\_17, Minos\_17, Bianmat\_17, Jams\_17, Jormungandr\_17, Harambe\_17, Lahirium\_17, Luker\_17, Newt\_17, Sticker17\_17, Nimi13\_17
- Track 21 : Philon9\_21, Vitaenoi\_21
- Track 22 : Teatealatte\_20, Tredge\_20, Teech\_20
- Track 23 : ASerpRocky\_20, Demosthenes\_20
- Track 24 : Hollow\_20
- Track 25 : Benczkowski14\_20, Katyusha\_20, Niagara\_20
- Track 26 : Kvothe\_20
- Track 27 : Kampe\_18, Orchid\_18, PatrickStar\_18, Gibbles\_17
- Track 28 : RobinSparkles\_21
- Track 29 : Gmala1\_10

- Track 30 : GordDuk1\_10
- Track 31 : GordTnk2\_10
- Track 32 : GMA3\_10
- Track 33 : Jumbo\_15
- Track 34 : Camerico\_18
- Track 35 : Argena\_40, EmoNemo\_40, Chidiebere\_42, Pakusa\_40, Hanem\_42, Twin\_40, Amoonguss\_40, MintFritos\_40, Mikronejon\_40, Schomber\_41, Aloki\_42, Toneprano\_40, ChisanaKitsune\_38, Gray\_42, Kabocha\_43
- Track 36 : UBSmoodge\_43
- Track 37 : Oogie\_43
- Track 38 : ScarletRaider\_41, FlyingTortilla\_41
- Track 39 : DalanDe\_36, Thales\_35
- Track 40 : Lenoshki\_42, Beted\_42
- Track 41 : FruityLoops\_40
- Track 42 : Farrylious\_40
- Track 43 : Cantare\_17
- Track 44 : DocB7\_016
- Track 45 : Mbo2\_16
- Track 46 : Trogglehumper\_38

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

The start number called the most often in the published annotations is 5, it was called in 76 of the 98 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ASerpRocky\_20, Adgers\_21, Amore2\_22, Anamika\_17, Barbochs\_20, Beaver\_20, Benczkowski14\_20, BenoitCattle\_20, Bianmat\_17, BigShaq\_20, BillyBobJr\_21, BirksAndSocks\_20, Boneham\_20, Breezic\_20, Butterball\_20, Camerico\_18, CathyBurgh\_20, Chelms\_20, CinnamonToast\_21, Crete\_21, Dakiti\_20, Demosthenes\_20, Diabla\_19, Eggsie\_20, Ekhein\_20, Exiguo\_20, FelixAlejandro\_21, Flakey\_20, Gibbles\_17, Gmala1\_10, GordDuk1\_10, GordTnk2\_10, Gorko\_20, GourdThymes\_20, Guillaume\_17, Hail2Pitt\_17, Harambe\_17, HayZem\_21, Hello\_17, Hollow\_20, Hotorobo\_20, Jams\_17, Jellybones\_20, John316\_20, Jormungandr\_17, Jumbo\_15, Kampe\_18, Katyusha\_20, Kelzog\_20, Kvothe\_20, Lahirium\_17, Lidong\_17, Linetti\_21, Lizzo\_20, Luker\_17, Minos\_17, Monty\_19, MrWormie\_17, Msay19\_21, Neoevie\_17, Newt\_17, Niagara\_20, Nimi13\_17, Orchid\_18, PatrickStar\_18, Philon9\_21, PierreThree\_20, PokyPuppy\_19, Poland\_21, RemRem\_21, RobinSparkles\_21, RoyalG\_21, Sam12\_20, Shelley\_17, Sombrero\_20, Squibbles\_20, SteveFrench\_20, Sticker17\_17, Teatealatte\_20, Teech\_20, Tredge\_20, Vitaenoi\_21, Woes\_17, Worcestershire\_20,

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

- Austin\_22, Berries\_17, Charianelly\_17, Damp\_17, GMA7\_13, GTE7\_13, GalacticEye\_17, Kaseim\_17, Teal\_17,

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

- Aloki\_42, Amoonguss\_40, Argena\_40, Beted\_42, Cantare\_17, Chidiebere\_42, ChisanaKitsune\_38, DalanDe\_36, DocB7\_016, EmoNemo\_40, Farrylious\_40, FlyingTortilla\_41, FruityLoops\_40, GMA3\_10, Gray\_42, Hanem\_42, Kabocha\_43,

Lenoshki\_42, Mbo2\_16, Mikronejon\_40, MintFritos\_40, Oogie\_43, Pakusa\_40, Reynauld\_24, ScarletRaider\_41, Schomber\_41, Srilaccoli3\_21, Thales\_35, Toneprano\_40, Trogglehumper\_38, Twin\_40, UBSmoodge\_43,

### Summary by start number:

#### Start 5:

- Found in 93 of 125 ( 74.4% ) of genes in pham
- Manual Annotations of this start: 76 of 98
- Called 90.3% of time when present
- Phage (with cluster) where this start called: ASerpRocky\_20 (CS4), Adgers\_21 (CS2), Amore2\_22 (CS1), Anamika\_17 (CS3), Barbochs\_20 (CS2), Beaver\_20 (CS2), Benczkowski14\_20 (CS4), BenoitCattle\_20 (CS2), Bianmat\_17 (CS3), BigShaq\_20 (CS2), BillyBobJr\_21 (CS2), BirksAndSocks\_20 (CS2), Boneham\_20 (CS2), Breezic\_20 (CS2), Butterball\_20 (CS2), Camerico\_18 (DF4), CathyBurgh\_20 (CS2), Chelms\_20 (CS2), CinnamonToast\_21 (CS2), Crete\_21 (CS2), Dakiti\_20 (CS2), Demosthenes\_20 (CS4), Diabla\_19 (CS2), Eggsie\_20 (CS2), Ekhein\_20 (CS2), Exiguo\_20 (CS2), FelixAlejandro\_21 (CS2), Flakey\_20 (CS2), Gibbles\_17 (CX), Gmala1\_10 (DF1), GordDuk1\_10 (DF1), GordTnk2\_10 (DF1), Gorko\_20 (CS2), GourdThymes\_20 (CS2), Guillaume\_17 (CS3), Hail2Pitt\_17 (CS3), Harambe\_17 (CS3), HayZem\_21 (CS1), Hello\_17 (CS3), Hollow\_20 (CS4), Hotorobo\_20 (CS2), Jams\_17 (CS3), Jellybones\_20 (CS2), John316\_20 (CS2), Jormungandr\_17 (CS3), Jumbo\_15 (DF3), Kampe\_18 (CX), Katyusha\_20 (CS4), Kelzog\_20 (CS2), Kvothe\_20 (CS4), Lahirium\_17 (CS3), Lidong\_17 (CS3), Linetti\_21 (CS2), Lizzo\_20 (CS2), Luker\_17 (CS3), Minos\_17 (CS3), Monty\_19 (CS2), MrWormie\_17 (CS3), Msay19\_21 (CS2), Neoevie\_17 (CS3), Newt\_17 (CS3), Niagara\_20 (CS4), Nimi13\_17 (CS3), Orchid\_18 (CX), PatrickStar\_18 (CX), Philon9\_21 (CS4), PierreThree\_20 (CS2), PokyPuppy\_19 (CS2), Poland\_21 (CS2), RemRem\_21 (CS2), RobinSparkles\_21 (CX), RoyalG\_21 (CS2), Sam12\_20 (CS2), Shelley\_17 (CS3), Sombrero\_20 (CS2), Squibbles\_20 (CS2), SteveFrench\_20 (CS2), Sticker17\_17 (CS3), Teatealatte\_20 (CS4), Teech\_20 (CS4), Tredge\_20 (CS4), Vitaenoi\_21 (CS4), Woes\_17 (CS3), Worcestershire\_20 (CS2),

#### Start 6:

- Found in 1 of 125 ( 0.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA3\_10 (DF2),

#### Start 7:

- Found in 2 of 125 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 98
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Reynauld\_24 (CH), Srilaccoli3\_21 (CH),

#### Start 8:

- Found in 1 of 125 ( 0.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mbo2\_16 (singleton),

#### Start 9:

- Found in 26 of 125 ( 20.8% ) of genes in pham

- Manual Annotations of this start: 6 of 98
- Called 26.9% of time when present
- Phage (with cluster) where this start called: Berries\_17 (CS3), Charianelly\_17 (CS3), Damp\_17 (CS3), DocB7\_016 (singleton), GalacticEye\_17 (CS3), Kaseim\_17 (CS3), Teal\_17 (CS3),

Start 10:

- Found in 1 of 125 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 98
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Trogglehumper\_38 (singleton),

Start 11:

- Found in 26 of 125 ( 20.8% ) of genes in pham
- Manual Annotations of this start: 13 of 98
- Called 84.6% of time when present
- Phage (with cluster) where this start called: Alok\_i\_42 (DQ), Amoonguss\_40 (DQ), Argena\_40 (DQ), Cantare\_17 (singleton), Chidiebere\_42 (DQ), ChisanaKitsune\_38 (DQ), DalanDe\_36 (DQ), EmoNemo\_40 (DQ), FlyingTortilla\_41 (DQ), Gray\_42 (DQ), Hanem\_42 (DQ), Kabocha\_43 (DQ), Mikronejon\_40 (DQ), MintFritos\_40 (DQ), Oogie\_43 (DQ), Pakusa\_40 (DQ), ScarletRaider\_41 (DQ), Schomber\_41 (DQ), Thales\_35 (DQ), Toneprano\_40 (DQ), Twin\_40 (DQ), UBSmoodge\_43 (DQ),

Start 17:

- Found in 23 of 125 ( 18.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 17.4% of time when present
- Phage (with cluster) where this start called: Beted\_42 (DQ), Farrylious\_40 (DQ), FruityLoops\_40 (DQ), Lenoshki\_42 (DQ),

Start 28:

- Found in 79 of 125 ( 63.2% ) of genes in pham
- Manual Annotations of this start: 1 of 98
- Called 3.8% of time when present
- Phage (with cluster) where this start called: Austin\_22 (CS1), GMA7\_13 (CS1), GTE7\_13 (CS1),

### Summary by clusters:

There are 12 clusters represented in this pham: singleton, CH, DF4, DF1, DF3, DF2, CX, CS4, CS2, CS1, CS3, DQ,

Info for manual annotations of cluster CH:

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

Info for manual annotations of cluster CS1:

- Start number 5 was manually annotated 2 times for cluster CS1.
- Start number 28 was manually annotated 1 time for cluster CS1.

Info for manual annotations of cluster CS2:

- Start number 5 was manually annotated 36 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 5 was manually annotated 19 times for cluster CS3.
- Start number 9 was manually annotated 6 times for cluster CS3.

Info for manual annotations of cluster CS4:

- Start number 5 was manually annotated 12 times for cluster CS4.

Info for manual annotations of cluster CX:

- Start number 5 was manually annotated 5 times for cluster CX.

Info for manual annotations of cluster DF3:

- Start number 5 was manually annotated 1 time for cluster DF3.

Info for manual annotations of cluster DF4:

- Start number 5 was manually annotated 1 time for cluster DF4.

Info for manual annotations of cluster DQ:

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

### **Gene Information:**

Gene: ASerpRocky\_20 Start: 19315, Stop: 19830, Start Num: 5

Candidate Starts for ASerpRocky\_20:

(Start: 5 @19315 has 76 MA's), (25, 19399), (29, 19414), (30, 19420), (49, 19573), (74, 19732), (76, 19744), (77, 19759), (81, 19783),

Gene: Adgers\_21 Start: 16983, Stop: 17480, Start Num: 5

Candidate Starts for Adgers\_21:

(Start: 5 @16983 has 76 MA's), (Start: 28 @17085 has 1 MA's), (42, 17217), (49, 17250), (50, 17262), (55, 17292), (59, 17307), (69, 17370), (71, 17376), (78, 17409), (81, 17430), (82, 17433), (85, 17451), (90, 17472),

Gene: Alok\_42 Start: 29827, Stop: 30282, Start Num: 11

Candidate Starts for Alok\_42:

(3, 29764), (Start: 11 @29827 has 13 MA's), (17, 29848), (20, 29878), (32, 29929), (33, 29941), (34, 29953), (38, 30007), (43, 30052), (46, 30064), (49, 30079), (54, 30112), (85, 30250),

Gene: Amoonguss\_40 Start: 29830, Stop: 30285, Start Num: 11

Candidate Starts for Amoonguss\_40:

(3, 29767), (Start: 11 @29830 has 13 MA's), (17, 29851), (20, 29881), (32, 29932), (33, 29944), (34, 29956), (38, 30010), (43, 30055), (46, 30067), (49, 30082), (54, 30115), (85, 30253),

Gene: Amore2\_22 Start: 16781, Stop: 17281, Start Num: 5

Candidate Starts for Amore2\_22:

(Start: 5 @16781 has 76 MA's), (23, 16859), (Start: 28 @16886 has 1 MA's), (50, 17063), (69, 17171), (71, 17177), (84, 17243),

Gene: Anamika\_17 Start: 17855, Stop: 18349, Start Num: 5

Candidate Starts for Anamika\_17:

(Start: 5 @17855 has 76 MA's), (Start: 9 @17864 has 6 MA's), (Start: 28 @17957 has 1 MA's), (49, 18122), (50, 18134), (55, 18164), (68, 18227), (69, 18242), (81, 18302), (85, 18323),

Gene: Argena\_40 Start: 29827, Stop: 30282, Start Num: 11

Candidate Starts for Argena\_40:

(3, 29764), (Start: 11 @29827 has 13 MA's), (17, 29848), (20, 29878), (32, 29929), (33, 29941), (34, 29953), (38, 30007), (43, 30052), (46, 30064), (49, 30079), (54, 30112), (85, 30250),

Gene: Austin\_22 Start: 16886, Stop: 17281, Start Num: 28

Candidate Starts for Austin\_22:

(Start: 5 @16781 has 76 MA's), (23, 16859), (Start: 28 @16886 has 1 MA's), (50, 17063), (69, 17171), (71, 17177), (84, 17243),

Gene: Barbochs\_20 Start: 16821, Stop: 17318, Start Num: 5

Candidate Starts for Barbochs\_20:

(Start: 5 @16821 has 76 MA's), (Start: 28 @16923 has 1 MA's), (49, 17088), (50, 17100), (55, 17130), (59, 17145), (69, 17208), (71, 17214), (78, 17247), (81, 17268), (82, 17271), (85, 17289), (90, 17310),

Gene: Beaver\_20 Start: 16829, Stop: 17326, Start Num: 5

Candidate Starts for Beaver\_20:

(Start: 5 @16829 has 76 MA's), (Start: 28 @16931 has 1 MA's), (42, 17063), (49, 17096), (50, 17108), (55, 17138), (59, 17153), (69, 17216), (71, 17222), (78, 17255), (81, 17276), (82, 17279), (85, 17297), (90, 17318),

Gene: Benczkowski14\_20 Start: 19397, Stop: 19909, Start Num: 5

Candidate Starts for Benczkowski14\_20:

(Start: 5 @19397 has 76 MA's), (25, 19481), (29, 19496), (40, 19610), (49, 19655), (77, 19838), (81, 19862), (82, 19865),

Gene: BenoitCattle\_20 Start: 16813, Stop: 17307, Start Num: 5

Candidate Starts for BenoitCattle\_20:

(Start: 5 @16813 has 76 MA's), (Start: 28 @16915 has 1 MA's), (49, 17080), (50, 17092), (69, 17200), (71, 17206), (78, 17239), (81, 17260), (85, 17281),

Gene: Berries\_17 Start: 17831, Stop: 18316, Start Num: 9

Candidate Starts for Berries\_17:

(Start: 5 @17822 has 76 MA's), (Start: 9 @17831 has 6 MA's), (Start: 28 @17924 has 1 MA's), (49, 18089), (50, 18101), (55, 18131), (68, 18194), (69, 18209), (81, 18269), (85, 18290),

Gene: Beted\_42 Start: 31528, Stop: 31962, Start Num: 17

Candidate Starts for Beted\_42:

(3, 31444), (Start: 11 @31507 has 13 MA's), (17, 31528), (20, 31558), (32, 31609), (33, 31621), (34, 31633), (38, 31687), (43, 31732), (44, 31741), (49, 31759), (54, 31792), (85, 31930),

Gene: Bianmat\_17 Start: 17862, Stop: 18356, Start Num: 5

Candidate Starts for Bianmat\_17:

(Start: 5 @17862 has 76 MA's), (Start: 9 @17871 has 6 MA's), (Start: 28 @17964 has 1 MA's), (49, 18129), (50, 18141), (55, 18171), (68, 18234), (69, 18249), (81, 18309), (85, 18330),

Gene: BigShaq\_20 Start: 16815, Stop: 17309, Start Num: 5

Candidate Starts for BigShaq\_20:

(Start: 5 @16815 has 76 MA's), (Start: 28 @16917 has 1 MA's), (49, 17082), (50, 17094), (69, 17202), (71, 17208), (78, 17241), (81, 17262), (85, 17283),

Gene: BillyBobJr\_21 Start: 16853, Stop: 17350, Start Num: 5

Candidate Starts for BillyBobJr\_21:

(Start: 5 @16853 has 76 MA's), (Start: 28 @16955 has 1 MA's), (42, 17087), (49, 17120), (50, 17132), (59, 17177), (69, 17240), (71, 17246), (78, 17279), (81, 17300), (85, 17321), (90, 17342),

Gene: BirksAndSocks\_20 Start: 16818, Stop: 17315, Start Num: 5

Candidate Starts for BirksAndSocks\_20:

(Start: 5 @16818 has 76 MA's), (Start: 28 @16920 has 1 MA's), (42, 17052), (49, 17085), (50, 17097), (59, 17142), (69, 17205), (71, 17211), (78, 17244), (81, 17265), (85, 17286), (90, 17307),

Gene: Boneham\_20 Start: 16817, Stop: 17314, Start Num: 5

Candidate Starts for Boneham\_20:

(Start: 5 @16817 has 76 MA's), (Start: 28 @16919 has 1 MA's), (42, 17051), (49, 17084), (50, 17096), (59, 17141), (69, 17204), (71, 17210), (78, 17243), (81, 17264), (85, 17285), (90, 17306),

Gene: Breezic\_20 Start: 16832, Stop: 17329, Start Num: 5

Candidate Starts for Breezic\_20:

(Start: 5 @16832 has 76 MA's), (Start: 28 @16934 has 1 MA's), (42, 17066), (49, 17099), (50, 17111), (55, 17141), (59, 17156), (69, 17219), (71, 17225), (78, 17258), (81, 17279), (82, 17282), (85, 17300), (90, 17321),

Gene: Butterball\_20 Start: 16817, Stop: 17314, Start Num: 5

Candidate Starts for Butterball\_20:

(Start: 5 @16817 has 76 MA's), (Start: 28 @16919 has 1 MA's), (42, 17051), (49, 17084), (50, 17096), (59, 17141), (69, 17204), (71, 17210), (78, 17243), (81, 17264), (85, 17285), (90, 17306),

Gene: Camerico\_18 Start: 16162, Stop: 16665, Start Num: 5

Candidate Starts for Camerico\_18:

(Start: 5 @16162 has 76 MA's), (19, 16216), (25, 16249), (33, 16282), (36, 16303), (41, 16381), (47, 16411), (57, 16480), (60, 16489), (61, 16510), (65, 16525), (92, 16660),

Gene: Cantare\_17 Start: 16184, Stop: 16657, Start Num: 11

Candidate Starts for Cantare\_17:

(Start: 11 @16184 has 13 MA's), (16, 16196), (21, 16235), (Start: 28 @16274 has 1 MA's), (45, 16421), (49, 16436), (52, 16463), (63, 16523), (77, 16580), (85, 16625),

Gene: CathyBurgh\_20 Start: 17689, Stop: 18186, Start Num: 5

Candidate Starts for CathyBurgh\_20:

(Start: 5 @17689 has 76 MA's), (Start: 28 @17791 has 1 MA's), (42, 17923), (49, 17956), (50, 17968), (55, 17998), (59, 18013), (69, 18076), (71, 18082), (78, 18115), (81, 18136), (82, 18139), (85, 18157), (90, 18178),

Gene: Charianelly\_17 Start: 17581, Stop: 18066, Start Num: 9

Candidate Starts for Charianelly\_17:

(Start: 5 @17572 has 76 MA's), (Start: 9 @17581 has 6 MA's), (Start: 28 @17674 has 1 MA's), (49, 17839), (50, 17851), (55, 17881), (68, 17944), (69, 17959), (81, 18019), (85, 18040),

Gene: Chelms\_20 Start: 16815, Stop: 17309, Start Num: 5

Candidate Starts for Chelms\_20:

(Start: 5 @16815 has 76 MA's), (Start: 28 @16917 has 1 MA's), (49, 17082), (50, 17094), (69, 17202), (71, 17208), (78, 17241), (81, 17262), (85, 17283),

Gene: Chidiebere\_42 Start: 29827, Stop: 30282, Start Num: 11

Candidate Starts for Chidiebere\_42:

(3, 29764), (Start: 11 @29827 has 13 MA's), (17, 29848), (20, 29878), (32, 29929), (33, 29941), (34, 29953), (38, 30007), (43, 30052), (46, 30064), (49, 30079), (54, 30112), (85, 30250),

Gene: ChisanaKitsune\_38 Start: 28618, Stop: 29073, Start Num: 11

Candidate Starts for ChisanaKitsune\_38:

(3, 28555), (Start: 11 @28618 has 13 MA's), (17, 28639), (20, 28669), (32, 28720), (33, 28732), (34, 28744), (38, 28798), (43, 28843), (46, 28855), (49, 28870), (54, 28903), (85, 29041),

Gene: CinnamonToast\_21 Start: 16853, Stop: 17350, Start Num: 5

Candidate Starts for CinnamonToast\_21:

(Start: 5 @16853 has 76 MA's), (Start: 28 @16955 has 1 MA's), (42, 17087), (49, 17120), (50, 17132), (59, 17177), (69, 17240), (71, 17246), (78, 17279), (81, 17300), (85, 17321), (90, 17342),

Gene: Crete\_21 Start: 17066, Stop: 17560, Start Num: 5

Candidate Starts for Crete\_21:

(Start: 5 @17066 has 76 MA's), (Start: 28 @17168 has 1 MA's), (49, 17333), (50, 17345), (69, 17453), (71, 17459), (78, 17492), (81, 17513), (85, 17534),

Gene: Dakiti\_20 Start: 17683, Stop: 18177, Start Num: 5

Candidate Starts for Dakiti\_20:

(Start: 5 @17683 has 76 MA's), (Start: 28 @17785 has 1 MA's), (49, 17950), (50, 17962), (69, 18070), (71, 18076), (78, 18109), (81, 18130), (85, 18151),

Gene: DalanDe\_36 Start: 32484, Stop: 32954, Start Num: 11

Candidate Starts for DalanDe\_36:

(Start: 11 @32484 has 13 MA's), (22, 32541), (25, 32559), (32, 32583), (33, 32595), (38, 32661), (52, 32760), (80, 32898),

Gene: Damp\_17 Start: 16745, Stop: 17230, Start Num: 9

Candidate Starts for Damp\_17:

(Start: 5 @16736 has 76 MA's), (Start: 9 @16745 has 6 MA's), (Start: 28 @16838 has 1 MA's), (49, 17003), (50, 17015), (55, 17045), (68, 17108), (69, 17123), (81, 17183), (85, 17204),

Gene: Demosthenes\_20 Start: 19288, Stop: 19803, Start Num: 5

Candidate Starts for Demosthenes\_20:

(Start: 5 @19288 has 76 MA's), (25, 19372), (29, 19387), (30, 19393), (49, 19546), (74, 19705), (76, 19717), (77, 19732), (81, 19756),

Gene: Diabla\_19 Start: 16631, Stop: 17128, Start Num: 5

Candidate Starts for Diabla\_19:

(Start: 5 @16631 has 76 MA's), (Start: 28 @16733 has 1 MA's), (49, 16898), (50, 16910), (59, 16955), (62, 16991), (69, 17018), (85, 17099), (87, 17111),

Gene: DocB7\_016 Start: 14520, Stop: 15011, Start Num: 9

Candidate Starts for DocB7\_016:

(Start: 9 @14520 has 6 MA's), (51, 14790), (53, 14808), (81, 14961), (82, 14964),

Gene: Eggsie\_20 Start: 16826, Stop: 17323, Start Num: 5

Candidate Starts for Eggsie\_20:

(Start: 5 @16826 has 76 MA's), (Start: 28 @16928 has 1 MA's), (49, 17093), (50, 17105), (59, 17150), (62, 17186), (69, 17213), (85, 17294), (87, 17306),

Gene: Ekhein\_20 Start: 16817, Stop: 17314, Start Num: 5

Candidate Starts for Ekhein\_20:

(Start: 5 @16817 has 76 MA's), (Start: 28 @16919 has 1 MA's), (42, 17051), (49, 17084), (50, 17096), (55, 17126), (59, 17141), (69, 17204), (71, 17210), (78, 17243), (81, 17264), (82, 17267), (85, 17285), (90, 17306),

Gene: EmoNemo\_40 Start: 29827, Stop: 30282, Start Num: 11

Candidate Starts for EmoNemo\_40:

(3, 29764), (Start: 11 @29827 has 13 MA's), (17, 29848), (20, 29878), (32, 29929), (33, 29941), (34, 29953), (38, 30007), (43, 30052), (46, 30064), (49, 30079), (54, 30112), (85, 30250),

Gene: Exiguo\_20 Start: 16829, Stop: 17326, Start Num: 5

Candidate Starts for Exiguo\_20:

(Start: 5 @16829 has 76 MA's), (Start: 28 @16931 has 1 MA's), (42, 17063), (49, 17096), (50, 17108), (55, 17138), (59, 17153), (69, 17216), (71, 17222), (78, 17255), (81, 17276), (82, 17279), (85, 17297), (90, 17318),

Gene: Farrylious\_40 Start: 29624, Stop: 30058, Start Num: 17

Candidate Starts for Farrylious\_40:

(3, 29540), (Start: 11 @29603 has 13 MA's), (17, 29624), (20, 29654), (32, 29705), (33, 29717), (34, 29729), (38, 29783), (43, 29828), (46, 29840), (49, 29855), (54, 29888), (85, 30026),

Gene: FelixAlejandro\_21 Start: 17015, Stop: 17512, Start Num: 5

Candidate Starts for FelixAlejandro\_21:

(Start: 5 @17015 has 76 MA's), (Start: 28 @17117 has 1 MA's), (42, 17249), (49, 17282), (50, 17294), (59, 17339), (69, 17402), (71, 17408), (77, 17438), (78, 17441), (81, 17462), (85, 17483), (90, 17504),

Gene: Flakey\_20 Start: 17690, Stop: 18187, Start Num: 5

Candidate Starts for Flakey\_20:

(Start: 5 @17690 has 76 MA's), (Start: 28 @17792 has 1 MA's), (42, 17924), (49, 17957), (50, 17969), (55, 17999), (59, 18014), (69, 18077), (71, 18083), (78, 18116), (81, 18137), (82, 18140), (85, 18158), (90, 18179),

Gene: FlyingTortilla\_41 Start: 32692, Stop: 33147, Start Num: 11

Candidate Starts for FlyingTortilla\_41:

(Start: 11 @32692 has 13 MA's), (13, 32698), (17, 32713), (32, 32794), (33, 32806), (37, 32833), (38, 32872), (44, 32926), (49, 32944), (80, 33091), (85, 33115),

Gene: FruityLoops\_40 Start: 32727, Stop: 33161, Start Num: 17

Candidate Starts for FruityLoops\_40:

(Start: 11 @32706 has 13 MA's), (13, 32712), (17, 32727), (32, 32808), (33, 32820), (37, 32847), (44, 32940), (49, 32958), (80, 33105), (85, 33129),

Gene: GMA3\_10 Start: 11406, Stop: 11906, Start Num: 6

Candidate Starts for GMA3\_10:

(6, 11406), (25, 11490), (Start: 28 @11502 has 1 MA's), (36, 11544), (47, 11652), (50, 11679), (61, 11751), (67, 11772), (72, 11796), (79, 11829), (81, 11844),

Gene: GMA7\_13 Start: 11072, Stop: 11467, Start Num: 28

Candidate Starts for GMA7\_13:

(Start: 5 @10967 has 76 MA's), (23, 11045), (Start: 28 @11072 has 1 MA's), (50, 11249), (69, 11357), (71, 11363), (84, 11429),

Gene: GTE7\_13 Start: 11131, Stop: 11526, Start Num: 28

Candidate Starts for GTE7\_13:

(Start: 5 @11026 has 76 MA's), (23, 11104), (Start: 28 @11131 has 1 MA's), (50, 11308), (69, 11416), (71, 11422), (84, 11488),

Gene: GalacticEye\_17 Start: 17552, Stop: 18037, Start Num: 9

Candidate Starts for GalacticEye\_17:

(Start: 5 @17543 has 76 MA's), (Start: 9 @17552 has 6 MA's), (Start: 28 @17645 has 1 MA's), (49, 17810), (50, 17822), (55, 17852), (68, 17915), (69, 17930), (81, 17990), (85, 18011),

Gene: Gibbles\_17 Start: 14844, Stop: 15338, Start Num: 5

Candidate Starts for Gibbles\_17:

(Start: 5 @14844 has 76 MA's), (Start: 28 @14949 has 1 MA's), (36, 14991), (38, 15036), (49, 15111), (50, 15123), (60, 15171), (64, 15207), (77, 15261), (79, 15270), (83, 15294), (91, 15330),

Gene: Gmala1\_10 Start: 11275, Stop: 11763, Start Num: 5

Candidate Starts for Gmala1\_10:

(Start: 5 @11275 has 76 MA's), (12, 11290), (27, 11368), (36, 11413), (49, 11536), (57, 11590), (60, 11596), (78, 11689), (79, 11695), (81, 11710), (85, 11731),

Gene: GordDuk1\_10 Start: 11215, Stop: 11703, Start Num: 5

Candidate Starts for GordDuk1\_10:

(Start: 5 @11215 has 76 MA's), (12, 11230), (20, 11272), (27, 11308), (36, 11353), (49, 11476), (57, 11530), (60, 11536), (78, 11629), (79, 11635), (81, 11650), (85, 11671),

Gene: GordTnk2\_10 Start: 11182, Stop: 11670, Start Num: 5

Candidate Starts for GordTnk2\_10:

(Start: 5 @11182 has 76 MA's), (12, 11197), (20, 11239), (27, 11275), (36, 11320), (49, 11443), (57, 11497), (60, 11503), (73, 11572), (78, 11596), (79, 11602), (81, 11617), (85, 11638),

Gene: Gorko\_20 Start: 16821, Stop: 17318, Start Num: 5

Candidate Starts for Gorko\_20:

(Start: 5 @16821 has 76 MA's), (Start: 28 @16923 has 1 MA's), (42, 17055), (49, 17088), (50, 17100), (55, 17130), (59, 17145), (69, 17208), (71, 17214), (78, 17247), (81, 17268), (82, 17271), (85, 17289), (90, 17310),

Gene: GourdThymes\_20 Start: 17689, Stop: 18186, Start Num: 5

Candidate Starts for GourdThymes\_20:

(Start: 5 @17689 has 76 MA's), (Start: 28 @17791 has 1 MA's), (42, 17923), (49, 17956), (50, 17968), (55, 17998), (59, 18013), (69, 18076), (71, 18082), (78, 18115), (81, 18136), (82, 18139), (85, 18157), (90, 18178),

Gene: Gray\_42 Start: 29828, Stop: 30283, Start Num: 11

Candidate Starts for Gray\_42:

(3, 29765), (Start: 11 @29828 has 13 MA's), (17, 29849), (20, 29879), (32, 29930), (33, 29942), (34, 29954), (38, 30008), (43, 30053), (46, 30065), (49, 30080), (54, 30113), (85, 30251),

Gene: Guillaume\_17 Start: 17593, Stop: 18087, Start Num: 5

Candidate Starts for Guillaume\_17:

(Start: 5 @17593 has 76 MA's), (Start: 9 @17602 has 6 MA's), (Start: 28 @17695 has 1 MA's), (49, 17860), (50, 17872), (55, 17902), (68, 17965), (69, 17980), (81, 18040), (85, 18061),

Gene: Hail2Pitt\_17 Start: 18070, Stop: 18564, Start Num: 5

Candidate Starts for Hail2Pitt\_17:

(Start: 5 @18070 has 76 MA's), (Start: 9 @18079 has 6 MA's), (Start: 28 @18172 has 1 MA's), (49, 18337), (50, 18349), (55, 18379), (68, 18442), (69, 18457), (81, 18517), (85, 18538),

Gene: Hanem\_42 Start: 29827, Stop: 30282, Start Num: 11

Candidate Starts for Hanem\_42:

(3, 29764), (Start: 11 @29827 has 13 MA's), (17, 29848), (20, 29878), (32, 29929), (33, 29941), (34, 29953), (38, 30007), (43, 30052), (46, 30064), (49, 30079), (54, 30112), (85, 30250),

Gene: Harambe\_17 Start: 17854, Stop: 18348, Start Num: 5

Candidate Starts for Harambe\_17:

(Start: 5 @17854 has 76 MA's), (Start: 9 @17863 has 6 MA's), (Start: 28 @17956 has 1 MA's), (49, 18121), (50, 18133), (55, 18163), (68, 18226), (69, 18241), (81, 18301), (85, 18322),

Gene: HayZem\_21 Start: 16778, Stop: 17278, Start Num: 5

Candidate Starts for HayZem\_21:

(Start: 5 @16778 has 76 MA's), (14, 16802), (15, 16805), (23, 16856), (Start: 28 @16883 has 1 MA's), (50, 17060), (69, 17168), (71, 17174), (84, 17240),

Gene: Hello\_17 Start: 17822, Stop: 18316, Start Num: 5

Candidate Starts for Hello\_17:

(Start: 5 @17822 has 76 MA's), (Start: 9 @17831 has 6 MA's), (Start: 28 @17924 has 1 MA's), (49, 18089), (50, 18101), (55, 18131), (68, 18194), (69, 18209), (81, 18269), (85, 18290),

Gene: Hollow\_20 Start: 18563, Stop: 19057, Start Num: 5

Candidate Starts for Hollow\_20:

(Start: 5 @18563 has 76 MA's), (25, 18647), (29, 18662), (47, 18806), (49, 18821), (81, 19010), (82, 19013),

Gene: Hotorobo\_20 Start: 17700, Stop: 18197, Start Num: 5

Candidate Starts for Hotorobo\_20:

(Start: 5 @17700 has 76 MA's), (Start: 28 @17802 has 1 MA's), (42, 17934), (49, 17967), (50, 17979), (55, 18009), (59, 18024), (69, 18087), (71, 18093), (78, 18126), (81, 18147), (82, 18150), (85, 18168), (90, 18189),

Gene: Jams\_17 Start: 17016, Stop: 17510, Start Num: 5

Candidate Starts for Jams\_17:

(Start: 5 @17016 has 76 MA's), (Start: 9 @17025 has 6 MA's), (Start: 28 @17118 has 1 MA's), (49, 17283), (50, 17295), (55, 17325), (68, 17388), (69, 17403), (81, 17463), (85, 17484),

Gene: Jellybones\_20 Start: 16852, Stop: 17349, Start Num: 5

Candidate Starts for Jellybones\_20:

(Start: 5 @16852 has 76 MA's), (Start: 28 @16954 has 1 MA's), (42, 17086), (49, 17119), (50, 17131), (69, 17239), (71, 17245), (78, 17278), (81, 17299), (85, 17320), (90, 17341),

Gene: John316\_20 Start: 16817, Stop: 17314, Start Num: 5

Candidate Starts for John316\_20:

(Start: 5 @16817 has 76 MA's), (Start: 28 @16919 has 1 MA's), (42, 17051), (49, 17084), (50, 17096), (55, 17126), (59, 17141), (69, 17204), (71, 17210), (78, 17243), (81, 17264), (82, 17267), (85, 17285), (90, 17306),

Gene: Jormungandr\_17 Start: 17575, Stop: 18069, Start Num: 5

Candidate Starts for Jormungandr\_17:

(Start: 5 @17575 has 76 MA's), (Start: 9 @17584 has 6 MA's), (Start: 28 @17677 has 1 MA's), (49, 17842), (50, 17854), (55, 17884), (68, 17947), (69, 17962), (81, 18022), (85, 18043),

Gene: Jumbo\_15 Start: 16052, Stop: 16555, Start Num: 5

Candidate Starts for Jumbo\_15:

(Start: 5 @16052 has 76 MA's), (20, 16112), (24, 16136), (25, 16139), (Start: 28 @16151 has 1 MA's), (35, 16187), (36, 16193), (38, 16238), (39, 16259), (60, 16379), (66, 16418), (79, 16478), (81, 16493), (84, 16505), (86, 16520), (89, 16532), (91, 16538),

Gene: Kabocha\_43 Start: 30640, Stop: 31095, Start Num: 11

Candidate Starts for Kabocha\_43:

(3, 30577), (Start: 11 @30640 has 13 MA's), (17, 30661), (20, 30691), (32, 30742), (33, 30754), (34, 30766), (38, 30820), (43, 30865), (46, 30877), (49, 30892), (54, 30925), (85, 31063),

Gene: Kampe\_18 Start: 14702, Stop: 15196, Start Num: 5

Candidate Starts for Kampe\_18:

(Start: 5 @14702 has 76 MA's), (Start: 28 @14807 has 1 MA's), (36, 14849), (38, 14894), (49, 14969), (50, 14981), (60, 15029), (64, 15065), (77, 15119), (79, 15128), (83, 15152), (91, 15188),

Gene: Kaseim\_17 Start: 17016, Stop: 17501, Start Num: 9

Candidate Starts for Kaseim\_17:

(Start: 5 @17007 has 76 MA's), (Start: 9 @17016 has 6 MA's), (Start: 28 @17109 has 1 MA's), (49, 17274), (50, 17286), (55, 17316), (68, 17379), (69, 17394), (81, 17454), (85, 17475),

Gene: Katyusha\_20 Start: 19397, Stop: 19909, Start Num: 5

Candidate Starts for Katyusha\_20:

(Start: 5 @19397 has 76 MA's), (25, 19481), (29, 19496), (40, 19610), (49, 19655), (77, 19838), (81, 19862), (82, 19865),

Gene: Kelzog\_20 Start: 17701, Stop: 18198, Start Num: 5

Candidate Starts for Kelzog\_20:

(Start: 5 @17701 has 76 MA's), (Start: 28 @17803 has 1 MA's), (42, 17935), (49, 17968), (50, 17980), (55, 18010), (59, 18025), (69, 18088), (71, 18094), (78, 18127), (81, 18148), (82, 18151), (85, 18169), (90, 18190),

Gene: Kvothe\_20 Start: 19335, Stop: 19829, Start Num: 5

Candidate Starts for Kvothe\_20:

(Start: 5 @19335 has 76 MA's), (25, 19419), (29, 19434), (49, 19593), (76, 19743), (81, 19782), (82, 19785),

Gene: Lahirium\_17 Start: 18091, Stop: 18585, Start Num: 5

Candidate Starts for Lahirium\_17:

(Start: 5 @18091 has 76 MA's), (Start: 9 @18100 has 6 MA's), (Start: 28 @18193 has 1 MA's), (49, 18358), (50, 18370), (55, 18400), (68, 18463), (69, 18478), (81, 18538), (85, 18559),

Gene: Lenoshki\_42 Start: 31528, Stop: 31962, Start Num: 17

Candidate Starts for Lenoshki\_42:

(3, 31444), (Start: 11 @31507 has 13 MA's), (17, 31528), (20, 31558), (32, 31609), (33, 31621), (34, 31633), (38, 31687), (43, 31732), (44, 31741), (49, 31759), (54, 31792), (85, 31930),

Gene: Lidong\_17 Start: 17822, Stop: 18316, Start Num: 5

Candidate Starts for Lidong\_17:

(Start: 5 @17822 has 76 MA's), (Start: 9 @17831 has 6 MA's), (Start: 28 @17924 has 1 MA's), (49, 18089), (50, 18101), (55, 18131), (68, 18194), (69, 18209), (81, 18269), (85, 18290),

Gene: Linetti\_21 Start: 17832, Stop: 18326, Start Num: 5

Candidate Starts for Linetti\_21:

(Start: 5 @17832 has 76 MA's), (Start: 28 @17934 has 1 MA's), (42, 18066), (49, 18099), (50, 18111), (69, 18219), (71, 18225), (78, 18258), (81, 18279), (85, 18300),

Gene: Lizzo\_20 Start: 17689, Stop: 18186, Start Num: 5

Candidate Starts for Lizzo\_20:

(Start: 5 @17689 has 76 MA's), (Start: 28 @17791 has 1 MA's), (42, 17923), (49, 17956), (50, 17968), (55, 17998), (59, 18013), (69, 18076), (71, 18082), (78, 18115), (81, 18136), (82, 18139), (85, 18157), (90, 18178),

Gene: Luker\_17 Start: 17555, Stop: 18049, Start Num: 5

Candidate Starts for Luker\_17:

(Start: 5 @17555 has 76 MA's), (Start: 9 @17564 has 6 MA's), (Start: 28 @17657 has 1 MA's), (49, 17822), (50, 17834), (55, 17864), (68, 17927), (69, 17942), (81, 18002), (85, 18023),

Gene: Mbo2\_16 Start: 10875, Stop: 11396, Start Num: 8

Candidate Starts for Mbo2\_16:

(8, 10875), (18, 10911), (34, 11007), (49, 11148), (56, 11196), (57, 11202), (65, 11247), (81, 11325),

Gene: Mikronejon\_40 Start: 29827, Stop: 30282, Start Num: 11

Candidate Starts for Mikronejon\_40:

(3, 29764), (Start: 11 @29827 has 13 MA's), (17, 29848), (20, 29878), (32, 29929), (33, 29941), (34, 29953), (38, 30007), (43, 30052), (46, 30064), (49, 30079), (54, 30112), (85, 30250),

Gene: Minos\_17 Start: 17561, Stop: 18055, Start Num: 5

Candidate Starts for Minos\_17:

(Start: 5 @17561 has 76 MA's), (Start: 9 @17570 has 6 MA's), (Start: 28 @17663 has 1 MA's), (49, 17828), (50, 17840), (55, 17870), (68, 17933), (69, 17948), (81, 18008), (85, 18029),

Gene: MintFritos\_40 Start: 29828, Stop: 30283, Start Num: 11

Candidate Starts for MintFritos\_40:

(3, 29765), (Start: 11 @29828 has 13 MA's), (17, 29849), (20, 29879), (32, 29930), (33, 29942), (34, 29954), (38, 30008), (43, 30053), (46, 30065), (49, 30080), (54, 30113), (85, 30251),

Gene: Monty\_19 Start: 16833, Stop: 17330, Start Num: 5

Candidate Starts for Monty\_19:

(Start: 5 @16833 has 76 MA's), (Start: 28 @16935 has 1 MA's), (42, 17067), (49, 17100), (50, 17112), (55, 17142), (59, 17157), (69, 17220), (71, 17226), (78, 17259), (81, 17280), (82, 17283), (85, 17301), (90, 17322),

Gene: MrWormie\_17 Start: 16725, Stop: 17219, Start Num: 5

Candidate Starts for MrWormie\_17:

(Start: 5 @16725 has 76 MA's), (Start: 9 @16734 has 6 MA's), (Start: 28 @16827 has 1 MA's), (49, 16992), (50, 17004), (55, 17034), (68, 17097), (69, 17112), (81, 17172), (85, 17193),

Gene: Msay19\_21 Start: 17007, Stop: 17504, Start Num: 5

Candidate Starts for Msay19\_21:

(Start: 5 @17007 has 76 MA's), (Start: 28 @17109 has 1 MA's), (42, 17241), (49, 17274), (50, 17286), (59, 17331), (69, 17394), (71, 17400), (78, 17433), (81, 17454), (85, 17475), (90, 17496),

Gene: Neoevie\_17 Start: 17831, Stop: 18325, Start Num: 5

Candidate Starts for Neoevie\_17:

(Start: 5 @17831 has 76 MA's), (Start: 9 @17840 has 6 MA's), (Start: 28 @17933 has 1 MA's), (49, 18098), (50, 18110), (55, 18140), (68, 18203), (69, 18218), (81, 18278), (85, 18299),

Gene: Newt\_17 Start: 17572, Stop: 18066, Start Num: 5

Candidate Starts for Newt\_17:

(Start: 5 @17572 has 76 MA's), (Start: 9 @17581 has 6 MA's), (Start: 28 @17674 has 1 MA's), (49, 17839), (50, 17851), (55, 17881), (68, 17944), (69, 17959), (81, 18019), (85, 18040),

Gene: Niagara\_20 Start: 19354, Stop: 19866, Start Num: 5

Candidate Starts for Niagara\_20:

(Start: 5 @19354 has 76 MA's), (25, 19438), (29, 19453), (40, 19567), (49, 19612), (77, 19795), (81, 19819), (82, 19822),

Gene: Nimi13\_17 Start: 17573, Stop: 18067, Start Num: 5

Candidate Starts for Nimi13\_17:

(Start: 5 @17573 has 76 MA's), (Start: 9 @17582 has 6 MA's), (Start: 28 @17675 has 1 MA's), (49, 17840), (50, 17852), (55, 17882), (68, 17945), (69, 17960), (81, 18020), (85, 18041),

Gene: Oogie\_43 Start: 31533, Stop: 31988, Start Num: 11

Candidate Starts for Oogie\_43:

(3, 31470), (Start: 11 @31533 has 13 MA's), (17, 31554), (20, 31584), (32, 31635), (33, 31647), (34, 31659), (38, 31713), (43, 31758), (44, 31767), (49, 31785), (54, 31818), (85, 31956),

Gene: Orchid\_18 Start: 14702, Stop: 15196, Start Num: 5

Candidate Starts for Orchid\_18:

(Start: 5 @14702 has 76 MA's), (Start: 28 @14807 has 1 MA's), (36, 14849), (38, 14894), (49, 14969), (50, 14981), (60, 15029), (64, 15065), (77, 15119), (79, 15128), (83, 15152), (91, 15188),

Gene: Pakusa\_40 Start: 29569, Stop: 30024, Start Num: 11

Candidate Starts for Pakusa\_40:

(3, 29506), (Start: 11 @29569 has 13 MA's), (17, 29590), (20, 29620), (32, 29671), (33, 29683), (34, 29695), (38, 29749), (43, 29794), (46, 29806), (49, 29821), (54, 29854), (85, 29992),

Gene: PatrickStar\_18 Start: 14702, Stop: 15196, Start Num: 5

Candidate Starts for PatrickStar\_18:

(Start: 5 @14702 has 76 MA's), (Start: 28 @14807 has 1 MA's), (36, 14849), (38, 14894), (49, 14969), (50, 14981), (60, 15029), (64, 15065), (77, 15119), (79, 15128), (83, 15152), (91, 15188),

Gene: Philon9\_21 Start: 21217, Stop: 21729, Start Num: 5

Candidate Starts for Philon9\_21:

(Start: 5 @21217 has 76 MA's), (29, 21316), (49, 21475), (76, 21643), (81, 21682), (82, 21685),

Gene: PierreThree\_20 Start: 17683, Stop: 18177, Start Num: 5

Candidate Starts for PierreThree\_20:

(Start: 5 @17683 has 76 MA's), (Start: 28 @17785 has 1 MA's), (49, 17950), (50, 17962), (69, 18070), (71, 18076), (78, 18109), (81, 18130), (85, 18151),

Gene: PokyPuppy\_19 Start: 17576, Stop: 18073, Start Num: 5

Candidate Starts for PokyPuppy\_19:

(Start: 5 @17576 has 76 MA's), (Start: 28 @17678 has 1 MA's), (49, 17843), (50, 17855), (69, 17963), (78, 18002), (85, 18044), (90, 18065),

Gene: Poland\_21 Start: 16983, Stop: 17480, Start Num: 5

Candidate Starts for Poland\_21:

(Start: 5 @16983 has 76 MA's), (Start: 28 @17085 has 1 MA's), (42, 17217), (49, 17250), (50, 17262), (59, 17307), (69, 17370), (71, 17376), (78, 17409), (81, 17430), (82, 17433), (85, 17451), (90, 17472),

Gene: RemRem\_21 Start: 16829, Stop: 17326, Start Num: 5

Candidate Starts for RemRem\_21:

(Start: 5 @16829 has 76 MA's), (Start: 28 @16931 has 1 MA's), (42, 17063), (49, 17096), (50, 17108), (55, 17138), (59, 17153), (69, 17216), (71, 17222), (78, 17255), (81, 17276), (82, 17279), (85, 17297), (90, 17318),

Gene: Reynauld\_24 Start: 17582, Stop: 18082, Start Num: 7

Candidate Starts for Reynauld\_24:

(Start: 7 @17582 has 1 MA's), (31, 17693), (41, 17801), (48, 17852), (49, 17855), (50, 17867), (60, 17915), (65, 17951), (81, 18029), (84, 18041), (88, 18065),

Gene: RobinSparkles\_21 Start: 15295, Stop: 15789, Start Num: 5

Candidate Starts for RobinSparkles\_21:

(Start: 5 @15295 has 76 MA's), (25, 15388), (26, 15391), (Start: 28 @15400 has 1 MA's), (36, 15442), (38, 15487), (49, 15562), (50, 15574), (60, 15622), (64, 15658), (77, 15712), (79, 15721), (83, 15745), (91, 15781),

Gene: RoyalG\_21 Start: 17308, Stop: 17805, Start Num: 5

Candidate Starts for RoyalG\_21:

(Start: 5 @17308 has 76 MA's), (Start: 28 @17410 has 1 MA's), (49, 17575), (50, 17587), (69, 17695), (82, 17758), (85, 17776), (87, 17788),

Gene: Sam12\_20 Start: 16829, Stop: 17326, Start Num: 5

Candidate Starts for Sam12\_20:

(Start: 5 @16829 has 76 MA's), (Start: 28 @16931 has 1 MA's), (42, 17063), (49, 17096), (50, 17108), (55, 17138), (59, 17153), (69, 17216), (71, 17222), (78, 17255), (81, 17276), (82, 17279), (85, 17297), (90, 17318),

Gene: ScarletRaider\_41 Start: 32719, Stop: 33174, Start Num: 11

Candidate Starts for ScarletRaider\_41:

(Start: 11 @32719 has 13 MA's), (13, 32725), (17, 32740), (32, 32821), (33, 32833), (37, 32860), (38, 32899), (44, 32953), (49, 32971), (80, 33118), (85, 33142),

Gene: Schomber\_41 Start: 29577, Stop: 30032, Start Num: 11

Candidate Starts for Schomber\_41:

(3, 29514), (Start: 11 @29577 has 13 MA's), (17, 29598), (20, 29628), (32, 29679), (33, 29691), (34, 29703), (38, 29757), (43, 29802), (46, 29814), (49, 29829), (54, 29862), (85, 30000),

Gene: Shelley\_17 Start: 17049, Stop: 17543, Start Num: 5

Candidate Starts for Shelley\_17:

(Start: 5 @17049 has 76 MA's), (Start: 9 @17058 has 6 MA's), (Start: 28 @17151 has 1 MA's), (49, 17316), (50, 17328), (55, 17358), (68, 17421), (69, 17436), (81, 17496), (85, 17517),

Gene: Sombrero\_20 Start: 16861, Stop: 17358, Start Num: 5

Candidate Starts for Sombrero\_20:

(Start: 5 @16861 has 76 MA's), (Start: 28 @16963 has 1 MA's), (42, 17095), (49, 17128), (50, 17140), (55, 17170), (59, 17185), (69, 17248), (71, 17254), (78, 17287), (81, 17308), (82, 17311), (85, 17329), (90, 17350),

Gene: Squibbles\_20 Start: 17689, Stop: 18186, Start Num: 5

Candidate Starts for Squibbles\_20:

(Start: 5 @17689 has 76 MA's), (Start: 28 @17791 has 1 MA's), (42, 17923), (49, 17956), (50, 17968), (55, 17998), (59, 18013), (69, 18076), (71, 18082), (78, 18115), (81, 18136), (82, 18139), (85, 18157), (90, 18178),

Gene: Srilaccoli3\_21 Start: 17339, Stop: 17839, Start Num: 7

Candidate Starts for Srilaccoli3\_21:

(Start: 7 @17339 has 1 MA's), (31, 17450), (41, 17558), (48, 17609), (49, 17612), (50, 17624), (58, 17669), (60, 17672), (65, 17708), (88, 17822),

Gene: SteveFrench\_20 Start: 17504, Stop: 18001, Start Num: 5

Candidate Starts for SteveFrench\_20:

(Start: 5 @17504 has 76 MA's), (Start: 28 @17606 has 1 MA's), (49, 17771), (50, 17783), (69, 17891), (82, 17954), (85, 17972), (87, 17984),

Gene: Sticker17\_17 Start: 17572, Stop: 18066, Start Num: 5

Candidate Starts for Sticker17\_17:

(Start: 5 @17572 has 76 MA's), (Start: 9 @17581 has 6 MA's), (Start: 28 @17674 has 1 MA's), (49, 17839), (50, 17851), (55, 17881), (68, 17944), (69, 17959), (81, 18019), (85, 18040),

Gene: Teal\_17 Start: 17558, Stop: 18043, Start Num: 9

Candidate Starts for Teal\_17:

(Start: 5 @17549 has 76 MA's), (Start: 9 @17558 has 6 MA's), (Start: 28 @17651 has 1 MA's), (49, 17816), (50, 17828), (55, 17858), (68, 17921), (69, 17936), (81, 17996), (85, 18017),

Gene: Teatealatte\_20 Start: 19317, Stop: 19811, Start Num: 5

Candidate Starts for Teatealatte\_20:

(Start: 5 @19317 has 76 MA's), (25, 19401), (29, 19416), (34, 19449), (49, 19575), (76, 19725), (81, 19764), (82, 19767),

Gene: Teech\_20 Start: 19118, Stop: 19612, Start Num: 5

Candidate Starts for Teech\_20:

(Start: 5 @19118 has 76 MA's), (25, 19202), (29, 19217), (34, 19250), (49, 19376), (76, 19526), (81, 19565), (82, 19568),

Gene: Thales\_35 Start: 31400, Stop: 31870, Start Num: 11

Candidate Starts for Thales\_35:

(Start: 11 @31400 has 13 MA's), (22, 31457), (25, 31475), (32, 31499), (33, 31511), (38, 31577), (52, 31676), (80, 31814),

Gene: Toneprano\_40 Start: 29827, Stop: 30282, Start Num: 11

Candidate Starts for Toneprano\_40:

(3, 29764), (Start: 11 @29827 has 13 MA's), (17, 29848), (20, 29878), (32, 29929), (33, 29941), (34, 29953), (38, 30007), (43, 30052), (46, 30064), (49, 30079), (54, 30112), (85, 30250),

Gene: Tredge\_20 Start: 19317, Stop: 19811, Start Num: 5

Candidate Starts for Tredge\_20:

(Start: 5 @19317 has 76 MA's), (25, 19401), (29, 19416), (34, 19449), (49, 19575), (76, 19725), (81, 19764), (82, 19767),

Gene: Trogglehumper\_38 Start: 24086, Stop: 24607, Start Num: 10

Candidate Starts for Trogglehumper\_38:

(1, 23888), (4, 24056), (Start: 10 @24086 has 1 MA's), (14, 24098), (47, 24332), (50, 24359), (51, 24362), (57, 24401), (70, 24476), (75, 24497), (77, 24515),

Gene: Twin\_40 Start: 29827, Stop: 30282, Start Num: 11

Candidate Starts for Twin\_40:

(3, 29764), (Start: 11 @29827 has 13 MA's), (17, 29848), (20, 29878), (32, 29929), (33, 29941), (34, 29953), (38, 30007), (43, 30052), (46, 30064), (49, 30079), (54, 30112), (85, 30250),

Gene: UBSmoodge\_43 Start: 32453, Stop: 32908, Start Num: 11

Candidate Starts for UBSmoodge\_43:

(2, 32291), (Start: 11 @32453 has 13 MA's), (13, 32459), (17, 32474), (32, 32555), (33, 32567), (37, 32594), (44, 32687), (49, 32705), (80, 32852), (85, 32876),

Gene: Vitaenoi\_21 Start: 21216, Stop: 21728, Start Num: 5

Candidate Starts for Vitaenoi\_21:

(Start: 5 @21216 has 76 MA's), (29, 21315), (49, 21474), (76, 21642), (81, 21681), (82, 21684),

Gene: Woes\_17 Start: 18083, Stop: 18577, Start Num: 5

Candidate Starts for Woes\_17:

(Start: 5 @18083 has 76 MA's), (Start: 9 @18092 has 6 MA's), (Start: 28 @18185 has 1 MA's), (49, 18350), (50, 18362), (55, 18392), (68, 18455), (69, 18470), (81, 18530), (85, 18551),

Gene: Worcestershire\_20 Start: 16831, Stop: 17328, Start Num: 5

Candidate Starts for Worcestershire\_20:

(Start: 5 @16831 has 76 MA's), (Start: 28 @16933 has 1 MA's), (42, 17065), (49, 17098), (50, 17110), (55, 17140), (59, 17155), (69, 17218), (71, 17224), (78, 17257), (81, 17278), (82, 17281), (85, 17299), (90, 17320),