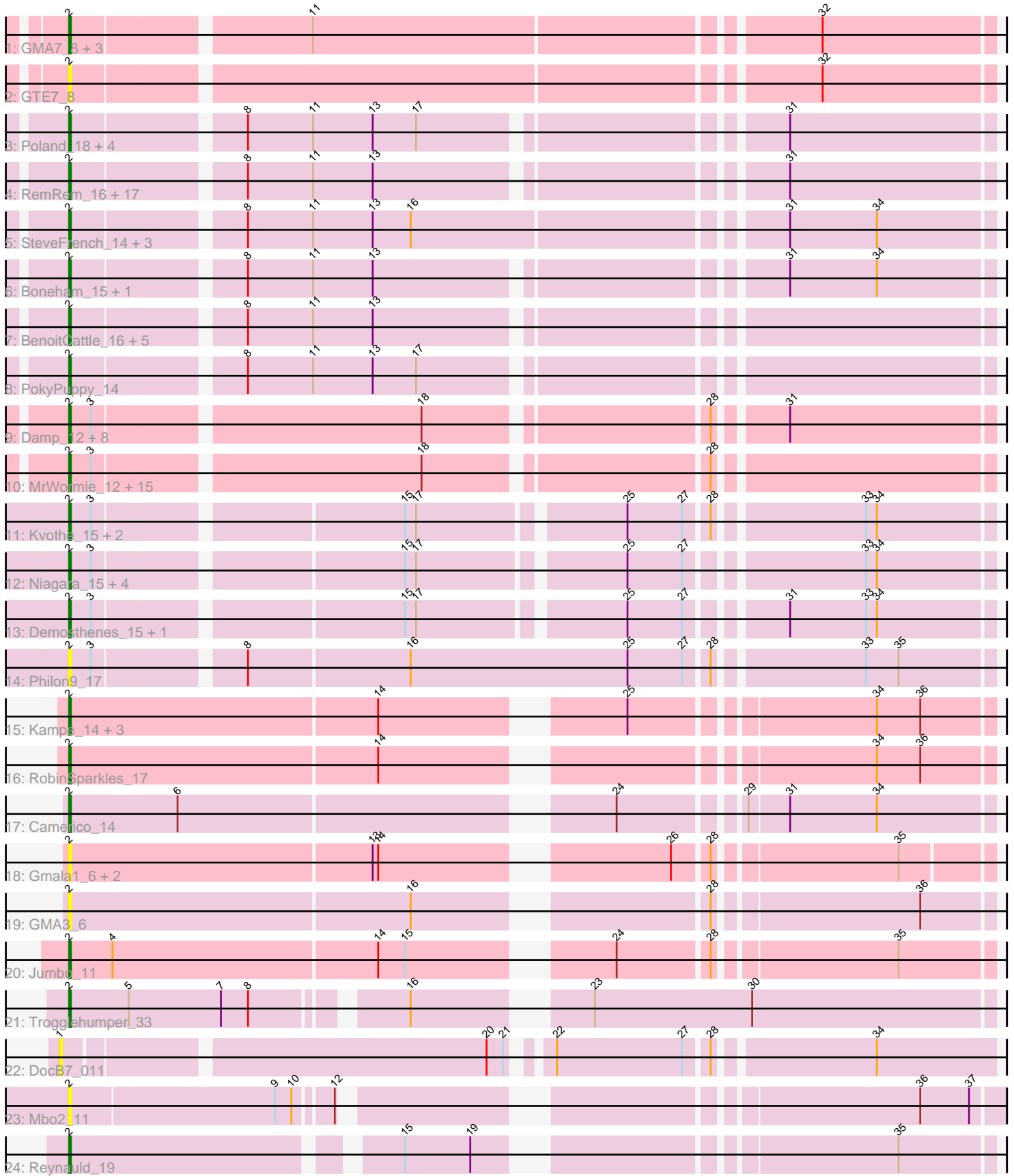


Pham 1192



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 1192 Report

This analysis was run 07/09/24 on database version 566.

Pham number 1192 has 92 members, 19 are drafts.

Phages represented in each track:

- Track 1 : GMA7\_8, Austin\_17, HayZem\_16, Amore2\_17
- Track 2 : GTE7\_8
- Track 3 : Poland\_18, Sombrero\_15, Msay19\_16, FelixAlejandro\_16, Jellybones\_15
- Track 4 : RemRem\_16, Barbochs\_15, Flakey\_15, Gorko\_15, CathyBurgh\_15, Ekhein\_15, Monty\_14, Lizzo\_15, Hotorobo\_15, Exiguo\_15, Breezic\_15, John316\_15, Beaver\_15, Squibbles\_15, Sam12\_15, GourdThymes\_15, Adgers\_16, BirksAndSocks\_15
- Track 5 : SteveFrench\_14, Diabla\_14, Eggsie\_15, RoyalG\_16
- Track 6 : Boneham\_15, Butterball\_15
- Track 7 : BenoitCattle\_16, BigShaq\_15, Dakiti\_15, Chelms\_15, PierreThree\_15, Linetti\_16
- Track 8 : PokyPuppy\_14
- Track 9 : Damp\_12, Shelley\_12, Lidong\_12, Guillaume\_12, Berries\_12, Jormungandr\_12, Sticker17\_12, Kaseim\_12, Chariannelly\_12
- Track 10 : MrWormie\_12, Lahirium\_12, Hail2Pitt\_12, Newt\_12, Anamika\_12, Neevie\_12, Teal\_12, Hello\_12, Woes\_12, Minos\_12, Bianmat\_12, Jams\_12, GalacticEye\_12, Harambe\_12, Luker\_12, Nimi13\_12
- Track 11 : Kvothe\_15, Katyusha\_15, Benczkowski14\_15
- Track 12 : Niagara\_15, Teech\_15, Teatealatte\_15, Tredge\_15, Hollow\_15
- Track 13 : Demosthenes\_15, ASerpRocky\_15
- Track 14 : Philon9\_17
- Track 15 : Kampe\_14, Orchid\_14, PatrickStar\_14, Gibbles\_13
- Track 16 : RobinSparkles\_17
- Track 17 : Camerico\_14
- Track 18 : Gmala1\_6, GordTnk2\_6, GordDuk1\_6
- Track 19 : GMA3\_6
- Track 20 : Jumbo\_11
- Track 21 : Trogglehumper\_33
- Track 22 : DocB7\_011
- Track 23 : Mbo2\_11
- Track 24 : Reynauld\_19

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

The start number called the most often in the published annotations is 2, it was called in 73 of the 73 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ASerpRocky\_15, Adgers\_16, Amore2\_17, Anamika\_12, Austin\_17, Barbochs\_15, Beaver\_15, Benczkowski14\_15, BenoitCattle\_16, Berries\_12, Bianmat\_12, BigShaq\_15, BirksAndSocks\_15, Boneham\_15, Breezic\_15, Butterball\_15, Camerico\_14, CathyBurgh\_15, Charianelly\_12, Chelms\_15, Dakiti\_15, Damp\_12, Demosthenes\_15, Diabla\_14, Eggsie\_15, Ekhein\_15, Exiguo\_15, FelixAlejandro\_16, Flakey\_15, GMA3\_6, GMA7\_8, GTE7\_8, GalacticEye\_12, Gibbles\_13, Gmala1\_6, GordDuk1\_6, GordTnk2\_6, Gorko\_15, GourdThymes\_15, Guillaume\_12, Hail2Pitt\_12, Harambe\_12, HayZem\_16, Hello\_12, Hollow\_15, Hotorobo\_15, Jams\_12, Jellybones\_15, John316\_15, Jormungandr\_12, Jumbo\_11, Kampe\_14, Kaseim\_12, Katyusha\_15, Kvothe\_15, Lahirium\_12, Lidong\_12, Linetti\_16, Lizzo\_15, Luker\_12, Mbo2\_11, Minos\_12, Monty\_14, MrWormie\_12, Msay19\_16, Neoevie\_12, Newt\_12, Niagara\_15, Nimi13\_12, Orchid\_14, PatrickStar\_14, Philon9\_17, PierreThree\_15, PokyPuppy\_14, Poland\_18, RemRem\_16, Reynauld\_19, RobinSparkles\_17, RoyalG\_16, Sam12\_15, Shelley\_12, Sombrero\_15, Squibbles\_15, SteveFrench\_14, Sticker17\_12, Teal\_12, Teatealatte\_15, Teech\_15, Tredge\_15, Trogglehumper\_33, Woes\_12,

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

- 

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

- DocB7\_011,

### Summary by start number:

Start 1:

- Found in 1 of 92 ( 1.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DocB7\_011 (singleton),

Start 2:

- Found in 91 of 92 ( 98.9% ) of genes in pham
- Manual Annotations of this start: 73 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ASerpRocky\_15 (CS4), Adgers\_16 (CS2), Amore2\_17 (CS1), Anamika\_12 (CS3), Austin\_17 (CS1), Barbochs\_15 (CS2), Beaver\_15 (CS2), Benczkowski14\_15 (CS4), BenoitCattle\_16 (CS2), Berries\_12 (CS3), Bianmat\_12 (CS3), BigShaq\_15 (CS2), BirksAndSocks\_15 (CS2), Boneham\_15 (CS2), Breezic\_15 (CS2), Butterball\_15 (CS2), Camerico\_14 (DF), CathyBurgh\_15 (CS2), Charianelly\_12 (CS3), Chelms\_15 (CS2), Dakiti\_15 (CS2), Damp\_12 (CS3), Demosthenes\_15 (CS4), Diabla\_14 (CS2), Eggsie\_15 (CS2), Ekhein\_15 (CS2), Exiguo\_15 (CS2), FelixAlejandro\_16 (CS2), Flakey\_15 (CS2), GMA3\_6 (DF2), GMA7\_8 (CS1), GTE7\_8 (CS1), GalacticEye\_12 (CS3), Gibbles\_13 (CX), Gmala1\_6 (DF1), GordDuk1\_6 (DF1), GordTnk2\_6 (DF1), Gorko\_15 (CS2), GourdThymes\_15 (CS2), Guillaume\_12 (CS3), Hail2Pitt\_12 (CS3), Harambe\_12 (CS3), HayZem\_16 (CS1), Hello\_12 (CS3), Hollow\_15 (CS4), Hotorobo\_15 (CS2), Jams\_12 (CS3), Jellybones\_15 (CS2), John316\_15 (CS2), Jormungandr\_12 (CS3), Jumbo\_11 (DF3), Kampe\_14 (CX), Kaseim\_12 (CS3), Katyusha\_15 (CS4),

Kvothe\_15 (CS4), Lahirium\_12 (CS3), Lidong\_12 (CS3), Linetti\_16 (CS2), Lizzo\_15 (CS2), Luker\_12 (CS3), Mbo2\_11 (singleton), Minos\_12 (CS3), Monty\_14 (CS2), MrWormie\_12 (CS3), Msay19\_16 (CS2), Neoevie\_12 (CS3), Newt\_12 (CS3), Niagara\_15 (CS4), Nimi13\_12 (CS3), Orchid\_14 (CX), PatrickStar\_14 (CX), Philon9\_17 (CS4), PierreThree\_15 (CS2), PokyPuppy\_14 (CS2), Poland\_18 (CS2), RemRem\_16 (CS2), Reynauld\_19 (singleton), RobinSparkles\_17 (CX), RoyalG\_16 (CS2), Sam12\_15 (CS2), Shelley\_12 (CS3), Sombrero\_15 (CS2), Squibbles\_15 (CS2), SteveFrench\_14 (CS2), Sticker17\_12 (CS3), Teal\_12 (CS3), Teatealatte\_15 (CS4), Teech\_15 (CS4), Tredge\_15 (CS4), Trogglehumper\_33 (singleton), Woes\_12 (CS3),

### **Summary by clusters:**

There are 10 clusters represented in this pham: singleton, DF, DF1, DF3, DF2, CX, CS4, CS1, CS3, CS2,

Info for manual annotations of cluster CS1:

- Start number 2 was manually annotated 3 times for cluster CS1.

Info for manual annotations of cluster CS2:

- Start number 2 was manually annotated 29 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 2 was manually annotated 23 times for cluster CS3.

Info for manual annotations of cluster CS4:

- Start number 2 was manually annotated 9 times for cluster CS4.

Info for manual annotations of cluster CX:

- Start number 2 was manually annotated 5 times for cluster CX.

Info for manual annotations of cluster DF:

- Start number 2 was manually annotated 1 time for cluster DF.

Info for manual annotations of cluster DF3:

- Start number 2 was manually annotated 1 time for cluster DF3.

### **Gene Information:**

Gene: ASerpRocky\_15 Start: 16516, Stop: 16983, Start Num: 2

Candidate Starts for ASerpRocky\_15:

(Start: 2 @16516 has 73 MA's), (3, 16528), (15, 16687), (17, 16693), (25, 16798), (27, 16828), (31, 16873), (33, 16915), (34, 16921),

Gene: Adgers\_16 Start: 14184, Stop: 14654, Start Num: 2

Candidate Starts for Adgers\_16:

(Start: 2 @14184 has 73 MA's), (8, 14271), (11, 14307), (13, 14340), (31, 14544),

Gene: Amore2\_17 Start: 14032, Stop: 14511, Start Num: 2

Candidate Starts for Amore2\_17:

(Start: 2 @14032 has 73 MA's), (11, 14155), (32, 14419),

Gene: Anamika\_12 Start: 15087, Stop: 15557, Start Num: 2

Candidate Starts for Anamika\_12:

(Start: 2 @15087 has 73 MA's), (3, 15099), (18, 15270), (28, 15414),

Gene: Austin\_17 Start: 14032, Stop: 14511, Start Num: 2

Candidate Starts for Austin\_17:

(Start: 2 @14032 has 73 MA's), (11, 14155), (32, 14419),

Gene: Barbochs\_15 Start: 14022, Stop: 14492, Start Num: 2

Candidate Starts for Barbochs\_15:

(Start: 2 @14022 has 73 MA's), (8, 14109), (11, 14145), (13, 14178), (31, 14382),

Gene: Beaver\_15 Start: 14030, Stop: 14500, Start Num: 2

Candidate Starts for Beaver\_15:

(Start: 2 @14030 has 73 MA's), (8, 14117), (11, 14153), (13, 14186), (31, 14390),

Gene: Benczkowski14\_15 Start: 16598, Stop: 17065, Start Num: 2

Candidate Starts for Benczkowski14\_15:

(Start: 2 @16598 has 73 MA's), (3, 16610), (15, 16769), (17, 16775), (25, 16880), (27, 16910), (28, 16922), (33, 16997), (34, 17003),

Gene: BenoitCattle\_16 Start: 14016, Stop: 14486, Start Num: 2

Candidate Starts for BenoitCattle\_16:

(Start: 2 @14016 has 73 MA's), (8, 14103), (11, 14139), (13, 14172),

Gene: Berries\_12 Start: 15072, Stop: 15542, Start Num: 2

Candidate Starts for Berries\_12:

(Start: 2 @15072 has 73 MA's), (3, 15084), (18, 15255), (28, 15399), (31, 15432),

Gene: Bianmat\_12 Start: 15094, Stop: 15564, Start Num: 2

Candidate Starts for Bianmat\_12:

(Start: 2 @15094 has 73 MA's), (3, 15106), (18, 15277), (28, 15421),

Gene: BigShaq\_15 Start: 14018, Stop: 14488, Start Num: 2

Candidate Starts for BigShaq\_15:

(Start: 2 @14018 has 73 MA's), (8, 14105), (11, 14141), (13, 14174),

Gene: BirksAndSocks\_15 Start: 14019, Stop: 14489, Start Num: 2

Candidate Starts for BirksAndSocks\_15:

(Start: 2 @14019 has 73 MA's), (8, 14106), (11, 14142), (13, 14175), (31, 14379),

Gene: Boneham\_15 Start: 14018, Stop: 14488, Start Num: 2

Candidate Starts for Boneham\_15:

(Start: 2 @14018 has 73 MA's), (8, 14105), (11, 14141), (13, 14174), (31, 14378), (34, 14426),

Gene: Breezic\_15 Start: 14033, Stop: 14503, Start Num: 2

Candidate Starts for Breezic\_15:

(Start: 2 @14033 has 73 MA's), (8, 14120), (11, 14156), (13, 14189), (31, 14393),

Gene: Butterball\_15 Start: 14018, Stop: 14488, Start Num: 2

Candidate Starts for Butterball\_15:

(Start: 2 @14018 has 73 MA's), (8, 14105), (11, 14141), (13, 14174), (31, 14378), (34, 14426),

Gene: Camerico\_14 Start: 13672, Stop: 14139, Start Num: 2

Candidate Starts for Camerico\_14:

(Start: 2 @13672 has 73 MA's), (6, 13732), (24, 13948), (29, 14008), (31, 14029), (34, 14077),

Gene: CathyBurgh\_15 Start: 14890, Stop: 15360, Start Num: 2

Candidate Starts for CathyBurgh\_15:

(Start: 2 @14890 has 73 MA's), (8, 14977), (11, 15013), (13, 15046), (31, 15250),

Gene: Charianelly\_12 Start: 14804, Stop: 15274, Start Num: 2

Candidate Starts for Charianelly\_12:

(Start: 2 @14804 has 73 MA's), (3, 14816), (18, 14987), (28, 15131), (31, 15164),

Gene: Chelms\_15 Start: 14018, Stop: 14488, Start Num: 2

Candidate Starts for Chelms\_15:

(Start: 2 @14018 has 73 MA's), (8, 14105), (11, 14141), (13, 14174),

Gene: Dakiti\_15 Start: 14886, Stop: 15356, Start Num: 2

Candidate Starts for Dakiti\_15:

(Start: 2 @14886 has 73 MA's), (8, 14973), (11, 15009), (13, 15042),

Gene: Damp\_12 Start: 13968, Stop: 14438, Start Num: 2

Candidate Starts for Damp\_12:

(Start: 2 @13968 has 73 MA's), (3, 13980), (18, 14151), (28, 14295), (31, 14328),

Gene: Demosthenes\_15 Start: 16489, Stop: 16956, Start Num: 2

Candidate Starts for Demosthenes\_15:

(Start: 2 @16489 has 73 MA's), (3, 16501), (15, 16660), (17, 16666), (25, 16771), (27, 16801), (31, 16846), (33, 16888), (34, 16894),

Gene: Diabla\_14 Start: 13828, Stop: 14307, Start Num: 2

Candidate Starts for Diabla\_14:

(Start: 2 @13828 has 73 MA's), (8, 13915), (11, 13951), (13, 13984), (16, 14005), (31, 14197), (34, 14245),

Gene: DocB7\_011 Start: 11765, Stop: 12238, Start Num: 1

Candidate Starts for DocB7\_011:

(1, 11765), (20, 11987), (21, 11996), (22, 12011), (27, 12080), (28, 12092), (34, 12173),

Gene: Eggsie\_15 Start: 14023, Stop: 14502, Start Num: 2

Candidate Starts for Eggsie\_15:

(Start: 2 @14023 has 73 MA's), (8, 14110), (11, 14146), (13, 14179), (16, 14200), (31, 14392), (34, 14440),

Gene: Ekhein\_15 Start: 14018, Stop: 14488, Start Num: 2

Candidate Starts for Ekhein\_15:

(Start: 2 @14018 has 73 MA's), (8, 14105), (11, 14141), (13, 14174), (31, 14378),

Gene: Exiguo\_15 Start: 14030, Stop: 14500, Start Num: 2

Candidate Starts for Exiguo\_15:

(Start: 2 @14030 has 73 MA's), (8, 14117), (11, 14153), (13, 14186), (31, 14390),

Gene: FelixAlejandro\_16 Start: 14216, Stop: 14686, Start Num: 2  
Candidate Starts for FelixAlejandro\_16:  
(Start: 2 @14216 has 73 MA's), (8, 14303), (11, 14339), (13, 14372), (17, 14396), (31, 14576),

Gene: Flakey\_15 Start: 14891, Stop: 15361, Start Num: 2  
Candidate Starts for Flakey\_15:  
(Start: 2 @14891 has 73 MA's), (8, 14978), (11, 15014), (13, 15047), (31, 15251),

Gene: GMA3\_6 Start: 8376, Stop: 8843, Start Num: 2  
Candidate Starts for GMA3\_6:  
(Start: 2 @8376 has 73 MA's), (16, 8562), (28, 8700), (36, 8805),

Gene: GMA7\_8 Start: 8221, Stop: 8700, Start Num: 2  
Candidate Starts for GMA7\_8:  
(Start: 2 @8221 has 73 MA's), (11, 8344), (32, 8608),

Gene: GTE7\_8 Start: 8280, Stop: 8759, Start Num: 2  
Candidate Starts for GTE7\_8:  
(Start: 2 @8280 has 73 MA's), (32, 8667),

Gene: GalacticEye\_12 Start: 14793, Stop: 15263, Start Num: 2  
Candidate Starts for GalacticEye\_12:  
(Start: 2 @14793 has 73 MA's), (3, 14805), (18, 14976), (28, 15120),

Gene: Gibbles\_13 Start: 12164, Stop: 12631, Start Num: 2  
Candidate Starts for Gibbles\_13:  
(Start: 2 @12164 has 73 MA's), (14, 12332), (25, 12446), (34, 12569), (36, 12593),

Gene: Gmala1\_6 Start: 8633, Stop: 9097, Start Num: 2  
Candidate Starts for Gmala1\_6:  
(Start: 2 @8633 has 73 MA's), (13, 8798), (14, 8801), (26, 8939), (28, 8957), (35, 9050),

Gene: GordDuk1\_6 Start: 8573, Stop: 9037, Start Num: 2  
Candidate Starts for GordDuk1\_6:  
(Start: 2 @8573 has 73 MA's), (13, 8738), (14, 8741), (26, 8879), (28, 8897), (35, 8990),

Gene: GordTnk2\_6 Start: 8540, Stop: 9004, Start Num: 2  
Candidate Starts for GordTnk2\_6:  
(Start: 2 @8540 has 73 MA's), (13, 8705), (14, 8708), (26, 8846), (28, 8864), (35, 8957),

Gene: Gorko\_15 Start: 14022, Stop: 14492, Start Num: 2  
Candidate Starts for Gorko\_15:  
(Start: 2 @14022 has 73 MA's), (8, 14109), (11, 14145), (13, 14178), (31, 14382),

Gene: GourdThymes\_15 Start: 14890, Stop: 15360, Start Num: 2  
Candidate Starts for GourdThymes\_15:  
(Start: 2 @14890 has 73 MA's), (8, 14977), (11, 15013), (13, 15046), (31, 15250),

Gene: Guillaume\_12 Start: 14825, Stop: 15295, Start Num: 2  
Candidate Starts for Guillaume\_12:  
(Start: 2 @14825 has 73 MA's), (3, 14837), (18, 15008), (28, 15152), (31, 15185),

Gene: Hail2Pitt\_12 Start: 15302, Stop: 15772, Start Num: 2  
Candidate Starts for Hail2Pitt\_12:  
(Start: 2 @15302 has 73 MA's), (3, 15314), (18, 15485), (28, 15629),

Gene: Harambe\_12 Start: 15086, Stop: 15556, Start Num: 2  
Candidate Starts for Harambe\_12:  
(Start: 2 @15086 has 73 MA's), (3, 15098), (18, 15269), (28, 15413),

Gene: HayZem\_16 Start: 14032, Stop: 14511, Start Num: 2  
Candidate Starts for HayZem\_16:  
(Start: 2 @14032 has 73 MA's), (11, 14155), (32, 14419),

Gene: Hello\_12 Start: 15072, Stop: 15542, Start Num: 2  
Candidate Starts for Hello\_12:  
(Start: 2 @15072 has 73 MA's), (3, 15084), (18, 15255), (28, 15399),

Gene: Hollow\_15 Start: 15764, Stop: 16231, Start Num: 2  
Candidate Starts for Hollow\_15:  
(Start: 2 @15764 has 73 MA's), (3, 15776), (15, 15935), (17, 15941), (25, 16046), (27, 16076), (33, 16163), (34, 16169),

Gene: Hotorobo\_15 Start: 14901, Stop: 15371, Start Num: 2  
Candidate Starts for Hotorobo\_15:  
(Start: 2 @14901 has 73 MA's), (8, 14988), (11, 15024), (13, 15057), (31, 15261),

Gene: Jams\_12 Start: 14266, Stop: 14736, Start Num: 2  
Candidate Starts for Jams\_12:  
(Start: 2 @14266 has 73 MA's), (3, 14278), (18, 14449), (28, 14593),

Gene: Jellybones\_15 Start: 14053, Stop: 14523, Start Num: 2  
Candidate Starts for Jellybones\_15:  
(Start: 2 @14053 has 73 MA's), (8, 14140), (11, 14176), (13, 14209), (17, 14233), (31, 14413),

Gene: John316\_15 Start: 14018, Stop: 14488, Start Num: 2  
Candidate Starts for John316\_15:  
(Start: 2 @14018 has 73 MA's), (8, 14105), (11, 14141), (13, 14174), (31, 14378),

Gene: Jormungandr\_12 Start: 14807, Stop: 15277, Start Num: 2  
Candidate Starts for Jormungandr\_12:  
(Start: 2 @14807 has 73 MA's), (3, 14819), (18, 14990), (28, 15134), (31, 15167),

Gene: Jumbo\_11 Start: 13502, Stop: 13969, Start Num: 2  
Candidate Starts for Jumbo\_11:  
(Start: 2 @13502 has 73 MA's), (4, 13526), (14, 13670), (15, 13685), (24, 13778), (28, 13826), (35, 13919),

Gene: Kampe\_14 Start: 12022, Stop: 12489, Start Num: 2  
Candidate Starts for Kampe\_14:  
(Start: 2 @12022 has 73 MA's), (14, 12190), (25, 12304), (34, 12427), (36, 12451),

Gene: Kaseim\_12 Start: 14258, Stop: 14728, Start Num: 2  
Candidate Starts for Kaseim\_12:  
(Start: 2 @14258 has 73 MA's), (3, 14270), (18, 14441), (28, 14585), (31, 14618),



Gene: Katyusha\_15 Start: 16598, Stop: 17065, Start Num: 2  
Candidate Starts for Katyusha\_15:  
(Start: 2 @16598 has 73 MA's), (3, 16610), (15, 16769), (17, 16775), (25, 16880), (27, 16910), (28, 16922), (33, 16997), (34, 17003),

Gene: Kvothe\_15 Start: 16535, Stop: 17002, Start Num: 2  
Candidate Starts for Kvothe\_15:  
(Start: 2 @16535 has 73 MA's), (3, 16547), (15, 16706), (17, 16712), (25, 16817), (27, 16847), (28, 16859), (33, 16934), (34, 16940),

Gene: Lahirium\_12 Start: 15323, Stop: 15793, Start Num: 2  
Candidate Starts for Lahirium\_12:  
(Start: 2 @15323 has 73 MA's), (3, 15335), (18, 15506), (28, 15650),

Gene: Lidong\_12 Start: 15072, Stop: 15542, Start Num: 2  
Candidate Starts for Lidong\_12:  
(Start: 2 @15072 has 73 MA's), (3, 15084), (18, 15255), (28, 15399), (31, 15432),

Gene: Linetti\_16 Start: 15035, Stop: 15505, Start Num: 2  
Candidate Starts for Linetti\_16:  
(Start: 2 @15035 has 73 MA's), (8, 15122), (11, 15158), (13, 15191),

Gene: Lizzo\_15 Start: 14890, Stop: 15360, Start Num: 2  
Candidate Starts for Lizzo\_15:  
(Start: 2 @14890 has 73 MA's), (8, 14977), (11, 15013), (13, 15046), (31, 15250),

Gene: Luker\_12 Start: 14787, Stop: 15257, Start Num: 2  
Candidate Starts for Luker\_12:  
(Start: 2 @14787 has 73 MA's), (3, 14799), (18, 14970), (28, 15114),

Gene: Mbo2\_11 Start: 8130, Stop: 8585, Start Num: 2  
Candidate Starts for Mbo2\_11:  
(Start: 2 @8130 has 73 MA's), (9, 8241), (10, 8250), (12, 8268), (36, 8541), (37, 8568),

Gene: Minos\_12 Start: 14793, Stop: 15263, Start Num: 2  
Candidate Starts for Minos\_12:  
(Start: 2 @14793 has 73 MA's), (3, 14805), (18, 14976), (28, 15120),

Gene: Monty\_14 Start: 14034, Stop: 14504, Start Num: 2  
Candidate Starts for Monty\_14:  
(Start: 2 @14034 has 73 MA's), (8, 14121), (11, 14157), (13, 14190), (31, 14394),

Gene: MrWormie\_12 Start: 13957, Stop: 14427, Start Num: 2  
Candidate Starts for MrWormie\_12:  
(Start: 2 @13957 has 73 MA's), (3, 13969), (18, 14140), (28, 14284),

Gene: Msay19\_16 Start: 14208, Stop: 14678, Start Num: 2  
Candidate Starts for Msay19\_16:  
(Start: 2 @14208 has 73 MA's), (8, 14295), (11, 14331), (13, 14364), (17, 14388), (31, 14568),

Gene: Neoevie\_12 Start: 15063, Stop: 15533, Start Num: 2  
Candidate Starts for Neoevie\_12:

(Start: 2 @15063 has 73 MA's), (3, 15075), (18, 15246), (28, 15390),

Gene: Newt\_12 Start: 14804, Stop: 15274, Start Num: 2

Candidate Starts for Newt\_12:

(Start: 2 @14804 has 73 MA's), (3, 14816), (18, 14987), (28, 15131),

Gene: Niagara\_15 Start: 16555, Stop: 17022, Start Num: 2

Candidate Starts for Niagara\_15:

(Start: 2 @16555 has 73 MA's), (3, 16567), (15, 16726), (17, 16732), (25, 16837), (27, 16867), (33, 16954), (34, 16960),

Gene: Nimi13\_12 Start: 14805, Stop: 15275, Start Num: 2

Candidate Starts for Nimi13\_12:

(Start: 2 @14805 has 73 MA's), (3, 14817), (18, 14988), (28, 15132),

Gene: Orchid\_14 Start: 12022, Stop: 12489, Start Num: 2

Candidate Starts for Orchid\_14:

(Start: 2 @12022 has 73 MA's), (14, 12190), (25, 12304), (34, 12427), (36, 12451),

Gene: PatrickStar\_14 Start: 12022, Stop: 12489, Start Num: 2

Candidate Starts for PatrickStar\_14:

(Start: 2 @12022 has 73 MA's), (14, 12190), (25, 12304), (34, 12427), (36, 12451),

Gene: Philon9\_17 Start: 18425, Stop: 18904, Start Num: 2

Candidate Starts for Philon9\_17:

(Start: 2 @18425 has 73 MA's), (3, 18437), (8, 18512), (16, 18599), (25, 18719), (27, 18749), (28, 18761), (33, 18836), (35, 18854),

Gene: PierreThree\_15 Start: 14886, Stop: 15356, Start Num: 2

Candidate Starts for PierreThree\_15:

(Start: 2 @14886 has 73 MA's), (8, 14973), (11, 15009), (13, 15042),

Gene: PokyPuppy\_14 Start: 14771, Stop: 15241, Start Num: 2

Candidate Starts for PokyPuppy\_14:

(Start: 2 @14771 has 73 MA's), (8, 14858), (11, 14894), (13, 14927), (17, 14951),

Gene: Poland\_18 Start: 14184, Stop: 14654, Start Num: 2

Candidate Starts for Poland\_18:

(Start: 2 @14184 has 73 MA's), (8, 14271), (11, 14307), (13, 14340), (17, 14364), (31, 14544),

Gene: RemRem\_16 Start: 14030, Stop: 14500, Start Num: 2

Candidate Starts for RemRem\_16:

(Start: 2 @14030 has 73 MA's), (8, 14117), (11, 14153), (13, 14186), (31, 14390),

Gene: Reynauld\_19 Start: 14927, Stop: 15376, Start Num: 2

Candidate Starts for Reynauld\_19:

(Start: 2 @14927 has 73 MA's), (15, 15092), (19, 15128), (35, 15326),

Gene: RobinSparkles\_17 Start: 12615, Stop: 13082, Start Num: 2

Candidate Starts for RobinSparkles\_17:

(Start: 2 @12615 has 73 MA's), (14, 12783), (34, 13020), (36, 13044),

Gene: RoyalG\_16 Start: 14505, Stop: 14984, Start Num: 2

Candidate Starts for RoyalG\_16:

(Start: 2 @14505 has 73 MA's), (8, 14592), (11, 14628), (13, 14661), (16, 14682), (31, 14874), (34, 14922),

Gene: Sam12\_15 Start: 14030, Stop: 14500, Start Num: 2

Candidate Starts for Sam12\_15:

(Start: 2 @14030 has 73 MA's), (8, 14117), (11, 14153), (13, 14186), (31, 14390),

Gene: Shelley\_12 Start: 14281, Stop: 14751, Start Num: 2

Candidate Starts for Shelley\_12:

(Start: 2 @14281 has 73 MA's), (3, 14293), (18, 14464), (28, 14608), (31, 14641),

Gene: Sombrero\_15 Start: 14062, Stop: 14532, Start Num: 2

Candidate Starts for Sombrero\_15:

(Start: 2 @14062 has 73 MA's), (8, 14149), (11, 14185), (13, 14218), (17, 14242), (31, 14422),

Gene: Squibbles\_15 Start: 14890, Stop: 15360, Start Num: 2

Candidate Starts for Squibbles\_15:

(Start: 2 @14890 has 73 MA's), (8, 14977), (11, 15013), (13, 15046), (31, 15250),

Gene: SteveFrench\_14 Start: 14099, Stop: 14578, Start Num: 2

Candidate Starts for SteveFrench\_14:

(Start: 2 @14099 has 73 MA's), (8, 14186), (11, 14222), (13, 14255), (16, 14276), (31, 14468), (34, 14516),

Gene: Sticker17\_12 Start: 14804, Stop: 15274, Start Num: 2

Candidate Starts for Sticker17\_12:

(Start: 2 @14804 has 73 MA's), (3, 14816), (18, 14987), (28, 15131), (31, 15164),

Gene: Teal\_12 Start: 14781, Stop: 15251, Start Num: 2

Candidate Starts for Teal\_12:

(Start: 2 @14781 has 73 MA's), (3, 14793), (18, 14964), (28, 15108),

Gene: Teatealatte\_15 Start: 16518, Stop: 16985, Start Num: 2

Candidate Starts for Teatealatte\_15:

(Start: 2 @16518 has 73 MA's), (3, 16530), (15, 16689), (17, 16695), (25, 16800), (27, 16830), (33, 16917), (34, 16923),

Gene: Teech\_15 Start: 16319, Stop: 16786, Start Num: 2

Candidate Starts for Teech\_15:

(Start: 2 @16319 has 73 MA's), (3, 16331), (15, 16490), (17, 16496), (25, 16601), (27, 16631), (33, 16718), (34, 16724),

Gene: Tredge\_15 Start: 16518, Stop: 16985, Start Num: 2

Candidate Starts for Tredge\_15:

(Start: 2 @16518 has 73 MA's), (3, 16530), (15, 16689), (17, 16695), (25, 16800), (27, 16830), (33, 16917), (34, 16923),

Gene: Trogglehumper\_33 Start: 21342, Stop: 21809, Start Num: 2

Candidate Starts for Trogglehumper\_33:

(Start: 2 @21342 has 73 MA's), (5, 21375), (7, 21426), (8, 21441), (16, 21513), (23, 21591), (30, 21678),

Gene: Woes\_12 Start: 15333, Stop: 15803, Start Num: 2

Candidate Starts for Woes\_12:

(Start: 2 @15333 has 73 MA's), (3, 15345), (18, 15516), (28, 15660),