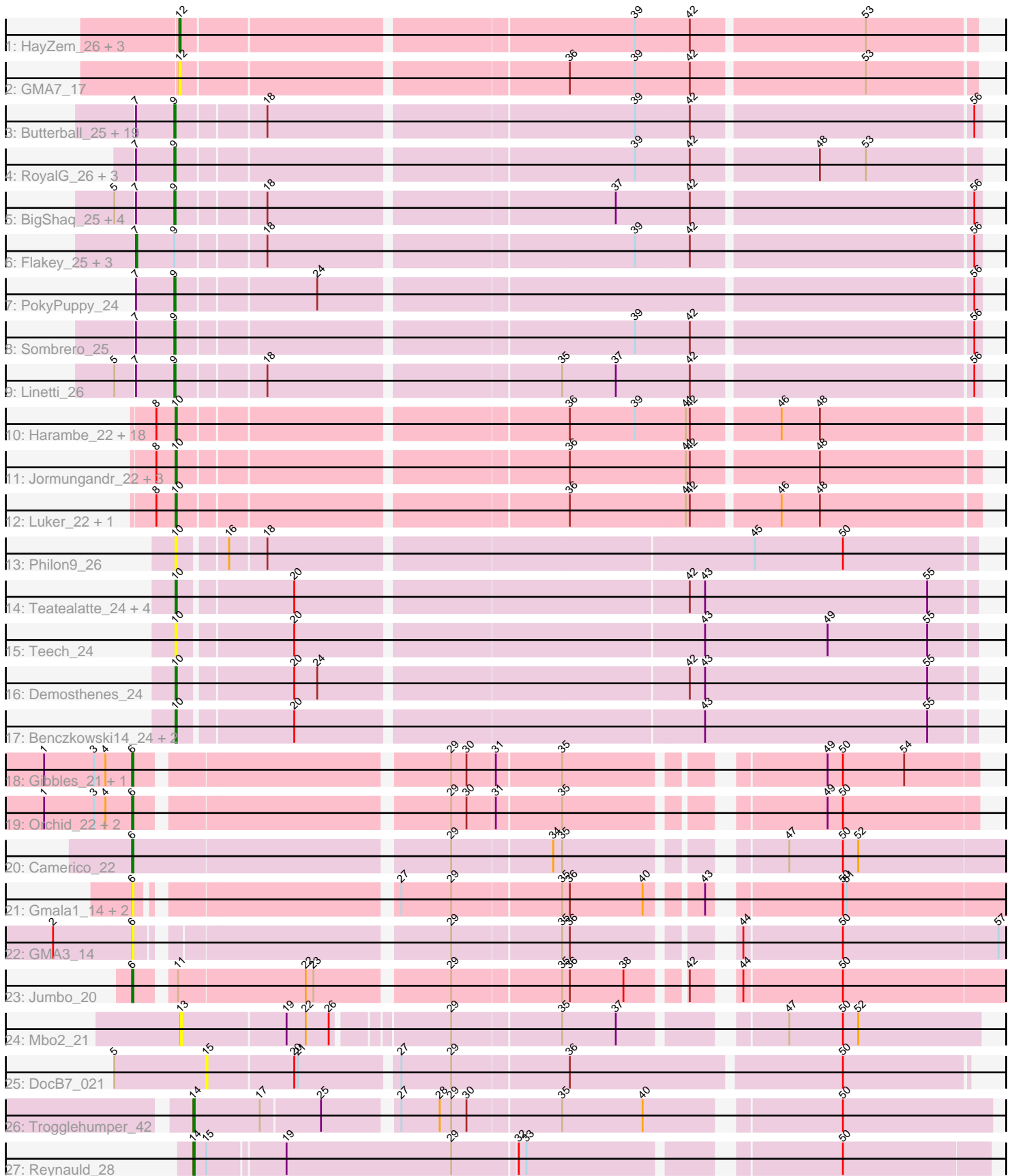


Pham 93699



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 93699 Report

This analysis was run 04/28/24 on database version 559.

Pham number 93699 has 92 members, 22 are drafts.

Phages represented in each track:

- Track 1 : HayZem_26, Amore2_27, Austin_27, GTE7_17
- Track 2 : GMA7_17
- Track 3 : Butterball_25, FelixAlejandro_26, Monty_24, Squibbles_25, Exiguo_25, Boneham_25, Jellybones_25, John316_25, Lizzo_25, Hotorobo_25, Adgers_26, GourdThymes_25, Sam12_25, Barbochs_25, Msay19_26, Gorko_25, BirksAndSocks_25, Poland_28, CathyBurgh_25, RemRem_26
- Track 4 : RoyalG_26, Eggsie_26, Diabla_24, SteveFrench_25
- Track 5 : BigShaq_25, PierreThree_25, Chelms_25, BenoitCattle_26, Dakiti_25
- Track 6 : Flakey_25, Ekhein_25, Beaver_25, Breezic_25
- Track 7 : PokyPuppy_24
- Track 8 : Sombrero_25
- Track 9 : Linetti_26
- Track 10 : Harambe_22, Woes_22, Lidong_22, Shelley_22, Jams_22, Anamika_22, Nimi13_22, Sticker17_22, Hello_22, Berries_22, Lahirium_22, Hail2Pitt_21, Neoevie_22, Charianelly_22, Damp_22, MrWormie_22, Newt_22, Bianmat_22, Teal_22
- Track 11 : Jormungandr_22, Minos_22, Guillaume_22, Kaseim_22
- Track 12 : Luker_22, GalacticEye_22
- Track 13 : Philon9_26
- Track 14 : Teatealatte_24, Tredge_24, ASerpRocky_24, Hollow_24, Niagara_24
- Track 15 : Teech_24
- Track 16 : Demosthenes_24
- Track 17 : Benczkowski14_24, Kvothe_24, Katyusha_24
- Track 18 : Gibbles_21, RobinSparkles_25
- Track 19 : Orchid_22, Kampe_22, PatrickStar_22
- Track 20 : Camerico_22
- Track 21 : Gmala1_14, GordDuk1_14, GordTnk2_14
- Track 22 : GMA3_14
- Track 23 : Jumbo_20
- Track 24 : Mbo2_21
- Track 25 : DocB7_021
- Track 26 : Trogglehumper_42
- Track 27 : Reynauld_28

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

The start number called the most often in the published annotations is 10, it was called in 30 of the 70 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ASerpRocky_24, Anamika_22, Benczkowski14_24, Berries_22, Bianmat_22, Charianelly_22, Damp_22, Demosthenes_24, GalacticEye_22, Guillaume_22, Hail2Pitt_21, Harambe_22, Hello_22, Hollow_24, Jams_22, Jormungandr_22, Kaseim_22, Katyusha_24, Kvothe_24, Lahirium_22, Lidong_22, Luker_22, Minos_22, MrWormie_22, Neoevie_22, Newt_22, Niagara_24, Nimi13_22, Philon9_26, Shelley_22, Sticker17_22, Teal_22, Teatealatte_24, Teech_24, Tredge_24, Woes_22,

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

-

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

- Adgers_26, Amore2_27, Austin_27, Barbochs_25, Beaver_25, BenoitCattle_26, BigShaq_25, BirksAndSocks_25, Boneham_25, Breezic_25, Butterball_25, Camerico_22, CathyBurgh_25, Chelms_25, Dakiti_25, Diabla_24, DocB7_021, Eggsie_26, Ekhein_25, Exiguo_25, FelixAlejandro_26, Flakey_25, GMA3_14, GMA7_17, GTE7_17, Gibbles_21, Gmala1_14, GordDuk1_14, GordTnk2_14, Gorko_25, GourdThymes_25, HayZem_26, Hotorobo_25, Jellybones_25, John316_25, Jumbo_20, Kampe_22, Linetti_26, Lizzo_25, Mbo2_21, Monty_24, Msay19_26, Orchid_22, PatrickStar_22, PierreThree_25, PokyPuppy_24, Poland_28, RemRem_26, Reynauld_28, RobinSparkles_25, RoyalG_26, Sam12_25, Sombrero_25, Squibbles_25, SteveFrench_25, Trogglehumper_42,

Summary by start number:

Start 6:

- Found in 11 of 92 (12.0%) of genes in pham
- Manual Annotations of this start: 7 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Camerico_22 (DF), GMA3_14 (DF2), Gibbles_21 (CX), Gmala1_14 (DF1), GordDuk1_14 (DF1), GordTnk2_14 (DF1), Jumbo_20 (DF3), Kampe_22 (CX), Orchid_22 (CX), PatrickStar_22 (CX), RobinSparkles_25 (CX),

Start 7:

- Found in 36 of 92 (39.1%) of genes in pham
- Manual Annotations of this start: 4 of 70
- Called 11.1% of time when present
- Phage (with cluster) where this start called: Beaver_25 (CS2), Breezic_25 (CS2), Ekhein_25 (CS2), Flakey_25 (CS2),

Start 9:

- Found in 36 of 92 (39.1%) of genes in pham
- Manual Annotations of this start: 25 of 70
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Adgers_26 (CS2), Barbochs_25 (CS2), BenoitCattle_26 (CS2), BigShaq_25 (CS2), BirksAndSocks_25 (CS2), Boneham_25 (CS2), Butterball_25 (CS2), CathyBurgh_25 (CS2), Chelms_25 (CS2), Dakiti_25

(CS2), Diabla_24 (CS2), Eggsie_26 (CS2), Exiguo_25 (CS2), FelixAlejandro_26 (CS2), Gorko_25 (CS2), GourdThymes_25 (CS2), Hotorobo_25 (CS2), Jellybones_25 (CS2), John316_25 (CS2), Linetti_26 (CS2), Lizzo_25 (CS2), Monty_24 (CS2), Msay19_26 (CS2), PierreThree_25 (CS2), PokyPuppy_24 (CS2), Poland_28 (CS2), RemRem_26 (CS2), RoyalG_26 (CS2), Sam12_25 (CS2), Sombrero_25 (CS2), Squibbles_25 (CS2), SteveFrench_25 (CS2),

Start 10:

- Found in 36 of 92 (39.1%) of genes in pham
- Manual Annotations of this start: 30 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ASerpRocky_24 (CS4), Anamika_22 (CS3), Benczkowski14_24 (CS4), Berries_22 (CS3), Bianmat_22 (CS3), Charianelly_22 (CS3), Damp_22 (CS3), Demosthenes_24 (CS4), GalacticEye_22 (CS3), Guillaume_22 (CS3), Hail2Pitt_21 (CS3), Harambe_22 (CS3), Hello_22 (CS3), Hollow_24 (CS4), Jams_22 (CS3), Jormungandr_22 (CS3), Kaseim_22 (CS3), Katyusha_24 (CS4), Kvothe_24 (CS4), Lahirium_22 (CS3), Lidong_22 (CS3), Luker_22 (CS3), Minos_22 (CS3), MrWormie_22 (CS3), Neoevie_22 (CS3), Newt_22 (CS3), Niagara_24 (CS4), Nimi13_22 (CS3), Philon9_26 (CS4), Shelley_22 (CS3), Sticker17_22 (CS3), Teal_22 (CS3), Teatealatte_24 (CS4), Teech_24 (CS4), Tredge_24 (CS4), Woes_22 (CS3),

Start 12:

- Found in 5 of 92 (5.4%) of genes in pham
- Manual Annotations of this start: 2 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amore2_27 (CS1), Austin_27 (CS1), GMA7_17 (CS1), GTE7_17 (CS1), HayZem_26 (CS1),

Start 13:

- 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: Mbo2_21 (singleton),

Start 14:

- Found in 2 of 92 (2.2%) of genes in pham
- Manual Annotations of this start: 2 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Reynauld_28 (singleton), Trogglehumper_42 (singleton),

Start 15:

- Found in 2 of 92 (2.2%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: DocB7_021 (singleton),

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 12 was manually annotated 2 times for cluster CS1.

Info for manual annotations of cluster CS2:

- Start number 7 was manually annotated 4 times for cluster CS2.
- Start number 9 was manually annotated 25 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 10 was manually annotated 21 times for cluster CS3.

Info for manual annotations of cluster CS4:

- Start number 10 was manually annotated 9 times for cluster CS4.

Info for manual annotations of cluster CX:

- Start number 6 was manually annotated 5 times for cluster CX.

Info for manual annotations of cluster DF:

- Start number 6 was manually annotated 1 time for cluster DF.

Info for manual annotations of cluster DF3:

- Start number 6 was manually annotated 1 time for cluster DF3.

Gene Information:

Gene: ASerpRocky_24 Start: 21890, Stop: 22489, Start Num: 10

Candidate Starts for ASerpRocky_24:

(Start: 10 @21890 has 30 MA's), (20, 21974), (42, 22268), (43, 22280), (55, 22454),

Gene: Adgers_26 Start: 19531, Stop: 20124, Start Num: 9

Candidate Starts for Adgers_26:

(Start: 7 @19501 has 4 MA's), (Start: 9 @19531 has 25 MA's), (18, 19594), (39, 19867), (42, 19909), (56, 20119),

Gene: Amore2_27 Start: 19301, Stop: 19891, Start Num: 12

Candidate Starts for Amore2_27:

(Start: 12 @19301 has 2 MA's), (39, 19637), (42, 19679), (53, 19808),

Gene: Anamika_22 Start: 20388, Stop: 20981, Start Num: 10

Candidate Starts for Anamika_22:

(8, 20373), (Start: 10 @20388 has 30 MA's), (36, 20673), (39, 20724), (41, 20763), (42, 20766), (46, 20829), (48, 20859),

Gene: Austin_27 Start: 19301, Stop: 19891, Start Num: 12

Candidate Starts for Austin_27:

(Start: 12 @19301 has 2 MA's), (39, 19637), (42, 19679), (53, 19808),

Gene: Barbochs_25 Start: 19369, Stop: 19962, Start Num: 9

Candidate Starts for Barbochs_25:

(Start: 7 @19339 has 4 MA's), (Start: 9 @19369 has 25 MA's), (18, 19432), (39, 19705), (42, 19747), (56, 19957),

Gene: Beaver_25 Start: 19347, Stop: 19970, Start Num: 7

Candidate Starts for Beaver_25:

(Start: 7 @19347 has 4 MA's), (Start: 9 @19377 has 25 MA's), (18, 19440), (39, 19713), (42, 19755), (56, 19965),

Gene: Benczkowski14_24 Start: 21969, Stop: 22568, Start Num: 10

Candidate Starts for Benczkowski14_24:

(Start: 10 @21969 has 30 MA's), (20, 22053), (43, 22359), (55, 22533),

Gene: BenoitCattle_26 Start: 19400, Stop: 19993, Start Num: 9

Candidate Starts for BenoitCattle_26:

(5, 19355), (Start: 7 @19370 has 4 MA's), (Start: 9 @19400 has 25 MA's), (18, 19463), (37, 19721), (42, 19778), (56, 19988),

Gene: Berries_22 Start: 20355, Stop: 20948, Start Num: 10

Candidate Starts for Berries_22:

(8, 20340), (Start: 10 @20355 has 30 MA's), (36, 20640), (39, 20691), (41, 20730), (42, 20733), (46, 20796), (48, 20826),

Gene: Bianmat_22 Start: 20395, Stop: 20988, Start Num: 10

Candidate Starts for Bianmat_22:

(8, 20380), (Start: 10 @20395 has 30 MA's), (36, 20680), (39, 20731), (41, 20770), (42, 20773), (46, 20836), (48, 20866),

Gene: BigShaq_25 Start: 19387, Stop: 19980, Start Num: 9

Candidate Starts for BigShaq_25:

(5, 19342), (Start: 7 @19357 has 4 MA's), (Start: 9 @19387 has 25 MA's), (18, 19450), (37, 19708), (42, 19765), (56, 19975),

Gene: BirksAndSocks_25 Start: 19375, Stop: 19968, Start Num: 9

Candidate Starts for BirksAndSocks_25:

(Start: 7 @19345 has 4 MA's), (Start: 9 @19375 has 25 MA's), (18, 19438), (39, 19711), (42, 19753), (56, 19963),

Gene: Boneham_25 Start: 19374, Stop: 19967, Start Num: 9

Candidate Starts for Boneham_25:

(Start: 7 @19344 has 4 MA's), (Start: 9 @19374 has 25 MA's), (18, 19437), (39, 19710), (42, 19752), (56, 19962),

Gene: Breezic_25 Start: 19353, Stop: 19976, Start Num: 7

Candidate Starts for Breezic_25:

(Start: 7 @19353 has 4 MA's), (Start: 9 @19383 has 25 MA's), (18, 19446), (39, 19719), (42, 19761), (56, 19971),

Gene: Butterball_25 Start: 19374, Stop: 19967, Start Num: 9

Candidate Starts for Butterball_25:

(Start: 7 @19344 has 4 MA's), (Start: 9 @19374 has 25 MA's), (18, 19437), (39, 19710), (42, 19752), (56, 19962),

Gene: Camerico_22 Start: 18683, Stop: 19306, Start Num: 6

Candidate Starts for Camerico_22:

(Start: 6 @18683 has 7 MA's), (29, 18917), (34, 18992), (35, 18998), (47, 19139), (50, 19181), (52, 19193),

Gene: CathyBurgh_25 Start: 20237, Stop: 20830, Start Num: 9

Candidate Starts for CathyBurgh_25:

(Start: 7 @20207 has 4 MA's), (Start: 9 @20237 has 25 MA's), (18, 20300), (39, 20573), (42, 20615), (56, 20825),

Gene: Charianelly_22 Start: 20105, Stop: 20698, Start Num: 10

Candidate Starts for Charianelly_22:

(8, 20090), (Start: 10 @20105 has 30 MA's), (36, 20390), (39, 20441), (41, 20480), (42, 20483), (46, 20546), (48, 20576),

Gene: Chelms_25 Start: 19387, Stop: 19980, Start Num: 9

Candidate Starts for Chelms_25:

(5, 19342), (Start: 7 @19357 has 4 MA's), (Start: 9 @19387 has 25 MA's), (18, 19450), (37, 19708), (42, 19765), (56, 19975),

Gene: Dakiti_25 Start: 20255, Stop: 20848, Start Num: 9

Candidate Starts for Dakiti_25:

(5, 20210), (Start: 7 @20225 has 4 MA's), (Start: 9 @20255 has 25 MA's), (18, 20318), (37, 20576), (42, 20633), (56, 20843),

Gene: Damp_22 Start: 19269, Stop: 19862, Start Num: 10

Candidate Starts for Damp_22:

(8, 19254), (Start: 10 @19269 has 30 MA's), (36, 19554), (39, 19605), (41, 19644), (42, 19647), (46, 19710), (48, 19740),

Gene: Demosthenes_24 Start: 21863, Stop: 22462, Start Num: 10

Candidate Starts for Demosthenes_24:

(Start: 10 @21863 has 30 MA's), (20, 21947), (24, 21965), (42, 22241), (43, 22253), (55, 22427),

Gene: Diabla_24 Start: 19198, Stop: 19791, Start Num: 9

Candidate Starts for Diabla_24:

(Start: 7 @19168 has 4 MA's), (Start: 9 @19198 has 25 MA's), (39, 19534), (42, 19576), (48, 19669), (53, 19705),

Gene: DocB7_021 Start: 16982, Stop: 17548, Start Num: 15

Candidate Starts for DocB7_021:

(5, 16910), (15, 16982), (20, 17048), (21, 17051), (27, 17123), (29, 17162), (36, 17249), (50, 17453),

Gene: Eggsie_26 Start: 19393, Stop: 19986, Start Num: 9

Candidate Starts for Eggsie_26:

(Start: 7 @19363 has 4 MA's), (Start: 9 @19393 has 25 MA's), (39, 19729), (42, 19771), (48, 19864), (53, 19900),

Gene: Ekhein_25 Start: 19335, Stop: 19958, Start Num: 7

Candidate Starts for Ekhein_25:

(Start: 7 @19335 has 4 MA's), (Start: 9 @19365 has 25 MA's), (18, 19428), (39, 19701), (42, 19743), (56, 19953),

Gene: Exiguo_25 Start: 19377, Stop: 19970, Start Num: 9

Candidate Starts for Exiguo_25:

(Start: 7 @19347 has 4 MA's), (Start: 9 @19377 has 25 MA's), (18, 19440), (39, 19713), (42, 19755), (56, 19965),

Gene: FelixAlejandro_26 Start: 19572, Stop: 20165, Start Num: 9

Candidate Starts for FelixAlejandro_26:

(Start: 7 @19542 has 4 MA's), (Start: 9 @19572 has 25 MA's), (18, 19635), (39, 19908), (42, 19950), (56, 20160),

Gene: Flakey_25 Start: 20211, Stop: 20834, Start Num: 7

Candidate Starts for Flakey_25:

(Start: 7 @20211 has 4 MA's), (Start: 9 @20241 has 25 MA's), (18, 20304), (39, 20577), (42, 20619), (56, 20829),

Gene: GMA3_14 Start: 13894, Stop: 14499, Start Num: 6

Candidate Starts for GMA3_14:

(2, 13834), (Start: 6 @13894 has 7 MA's), (29, 14110), (35, 14191), (36, 14197), (44, 14299), (50, 14374), (57, 14494),

Gene: GMA7_17 Start: 13487, Stop: 14077, Start Num: 12

Candidate Starts for GMA7_17:

(Start: 12 @13487 has 2 MA's), (36, 13772), (39, 13823), (42, 13865), (53, 13994),

Gene: GTE7_17 Start: 13546, Stop: 14136, Start Num: 12

Candidate Starts for GTE7_17:

(Start: 12 @13546 has 2 MA's), (39, 13882), (42, 13924), (53, 14053),

Gene: GalacticEye_22 Start: 20076, Stop: 20669, Start Num: 10

Candidate Starts for GalacticEye_22:

(8, 20061), (Start: 10 @20076 has 30 MA's), (36, 20361), (41, 20451), (42, 20454), (46, 20517), (48, 20547),

Gene: Gibbles_21 Start: 17420, Stop: 18010, Start Num: 6

Candidate Starts for Gibbles_21:

(1, 17351), (3, 17390), (4, 17399), (Start: 6 @17420 has 7 MA's), (29, 17642), (30, 17654), (31, 17675), (35, 17723), (49, 17894), (50, 17906), (54, 17954),

Gene: Gmala1_14 Start: 13768, Stop: 14373, Start Num: 6

Candidate Starts for Gmala1_14:

(Start: 6 @13768 has 7 MA's), (27, 13945), (29, 13984), (35, 14065), (36, 14071), (40, 14128), (43, 14161), (50, 14248), (51, 14251),

Gene: GordDuk1_14 Start: 13708, Stop: 14313, Start Num: 6

Candidate Starts for GordDuk1_14:

(Start: 6 @13708 has 7 MA's), (27, 13885), (29, 13924), (35, 14005), (36, 14011), (40, 14068), (43, 14101), (50, 14188), (51, 14191),

Gene: GordTnk2_14 Start: 13675, Stop: 14280, Start Num: 6

Candidate Starts for GordTnk2_14:

(Start: 6 @13675 has 7 MA's), (27, 13852), (29, 13891), (35, 13972), (36, 13978), (40, 14035), (43, 14068), (50, 14155), (51, 14158),

Gene: Gorko_25 Start: 19369, Stop: 19962, Start Num: 9

Candidate Starts for Gorko_25:

(Start: 7 @19339 has 4 MA's), (Start: 9 @19369 has 25 MA's), (18, 19432), (39, 19705), (42, 19747), (56, 19957),

Gene: GourdThymes_25 Start: 20237, Stop: 20830, Start Num: 9

Candidate Starts for GourdThymes_25:

(Start: 7 @20207 has 4 MA's), (Start: 9 @20237 has 25 MA's), (18, 20300), (39, 20573), (42, 20615), (56, 20825),

Gene: Guillaume_22 Start: 20126, Stop: 20719, Start Num: 10

Candidate Starts for Guillaume_22:

(8, 20111), (Start: 10 @20126 has 30 MA's), (36, 20411), (41, 20501), (42, 20504), (48, 20597),

Gene: Hail2Pitt_21 Start: 20603, Stop: 21196, Start Num: 10

Candidate Starts for Hail2Pitt_21:

(8, 20588), (Start: 10 @20603 has 30 MA's), (36, 20888), (39, 20939), (41, 20978), (42, 20981), (46, 21044), (48, 21074),

Gene: Harambe_22 Start: 20387, Stop: 20980, Start Num: 10

Candidate Starts for Harambe_22:

(8, 20372), (Start: 10 @20387 has 30 MA's), (36, 20672), (39, 20723), (41, 20762), (42, 20765), (46, 20828), (48, 20858),

Gene: HayZem_26 Start: 19298, Stop: 19888, Start Num: 12

Candidate Starts for HayZem_26:

(Start: 12 @19298 has 2 MA's), (39, 19634), (42, 19676), (53, 19805),

Gene: Hello_22 Start: 20355, Stop: 20948, Start Num: 10

Candidate Starts for Hello_22:

(8, 20340), (Start: 10 @20355 has 30 MA's), (36, 20640), (39, 20691), (41, 20730), (42, 20733), (46, 20796), (48, 20826),

Gene: Hollow_24 Start: 21117, Stop: 21716, Start Num: 10

Candidate Starts for Hollow_24:

(Start: 10 @21117 has 30 MA's), (20, 21201), (42, 21495), (43, 21507), (55, 21681),

Gene: Hotorobo_25 Start: 20248, Stop: 20841, Start Num: 9

Candidate Starts for Hotorobo_25:

(Start: 7 @20218 has 4 MA's), (Start: 9 @20248 has 25 MA's), (18, 20311), (39, 20584), (42, 20626), (56, 20836),

Gene: Jams_22 Start: 19549, Stop: 20142, Start Num: 10

Candidate Starts for Jams_22:

(8, 19534), (Start: 10 @19549 has 30 MA's), (36, 19834), (39, 19885), (41, 19924), (42, 19927), (46, 19990), (48, 20020),

Gene: Jellybones_25 Start: 19409, Stop: 20002, Start Num: 9

Candidate Starts for Jellybones_25:

(Start: 7 @19379 has 4 MA's), (Start: 9 @19409 has 25 MA's), (18, 19472), (39, 19745), (42, 19787), (56, 19997),

Gene: John316_25 Start: 19365, Stop: 19958, Start Num: 9

Candidate Starts for John316_25:

(Start: 7 @19335 has 4 MA's), (Start: 9 @19365 has 25 MA's), (18, 19428), (39, 19701), (42, 19743), (56, 19953),

Gene: Jormungandr_22 Start: 20108, Stop: 20701, Start Num: 10

Candidate Starts for Jormungandr_22:

(8, 20093), (Start: 10 @20108 has 30 MA's), (36, 20393), (41, 20483), (42, 20486), (48, 20579),

Gene: Jumbo_20 Start: 18571, Stop: 19182, Start Num: 6

Candidate Starts for Jumbo_20:

(Start: 6 @18571 has 7 MA's), (11, 18595), (22, 18691), (23, 18697), (29, 18793), (35, 18874), (36, 18880), (38, 18922), (42, 18958), (44, 18982), (50, 19057),

Gene: Kampe_22 Start: 17278, Stop: 17868, Start Num: 6

Candidate Starts for Kampe_22:

(1, 17209), (3, 17248), (4, 17257), (Start: 6 @17278 has 7 MA's), (29, 17500), (30, 17512), (31, 17533), (35, 17581), (49, 17752), (50, 17764),

Gene: Kaseim_22 Start: 19540, Stop: 20133, Start Num: 10

Candidate Starts for Kaseim_22:

(8, 19525), (Start: 10 @19540 has 30 MA's), (36, 19825), (41, 19915), (42, 19918), (48, 20011),

Gene: Katyusha_24 Start: 21969, Stop: 22568, Start Num: 10

Candidate Starts for Katyusha_24:

(Start: 10 @21969 has 30 MA's), (20, 22053), (43, 22359), (55, 22533),

Gene: Kvothe_24 Start: 21889, Stop: 22488, Start Num: 10

Candidate Starts for Kvothe_24:

(Start: 10 @21889 has 30 MA's), (20, 21973), (43, 22279), (55, 22453),

Gene: Lahirium_22 Start: 20624, Stop: 21217, Start Num: 10

Candidate Starts for Lahirium_22:

(8, 20609), (Start: 10 @20624 has 30 MA's), (36, 20909), (39, 20960), (41, 20999), (42, 21002), (46, 21065), (48, 21095),

Gene: Lidong_22 Start: 20355, Stop: 20948, Start Num: 10

Candidate Starts for Lidong_22:

(8, 20340), (Start: 10 @20355 has 30 MA's), (36, 20640), (39, 20691), (41, 20730), (42, 20733), (46, 20796), (48, 20826),

Gene: Linetti_26 Start: 20405, Stop: 20998, Start Num: 9

Candidate Starts for Linetti_26:

(5, 20360), (Start: 7 @20375 has 4 MA's), (Start: 9 @20405 has 25 MA's), (18, 20468), (35, 20684), (37, 20726), (42, 20783), (56, 20993),

Gene: Lizzo_25 Start: 20237, Stop: 20830, Start Num: 9

Candidate Starts for Lizzo_25:

(Start: 7 @20207 has 4 MA's), (Start: 9 @20237 has 25 MA's), (18, 20300), (39, 20573), (42, 20615), (56, 20825),

Gene: Luker_22 Start: 20088, Stop: 20681, Start Num: 10

Candidate Starts for Luker_22:

(8, 20073), (Start: 10 @20088 has 30 MA's), (36, 20373), (41, 20463), (42, 20466), (46, 20529), (48, 20559),

Gene: Mbo2_21 Start: 13396, Stop: 13965, Start Num: 13

Candidate Starts for Mbo2_21:

(13, 13396), (19, 13474), (22, 13489), (26, 13507), (29, 13588), (35, 13669), (37, 13711), (47, 13816), (50, 13858), (52, 13870),

Gene: Minos_22 Start: 20097, Stop: 20690, Start Num: 10

Candidate Starts for Minos_22:

(8, 20082), (Start: 10 @20097 has 30 MA's), (36, 20382), (41, 20472), (42, 20475), (48, 20568),

Gene: Monty_24 Start: 19381, Stop: 19974, Start Num: 9

Candidate Starts for Monty_24:

(Start: 7 @19351 has 4 MA's), (Start: 9 @19381 has 25 MA's), (18, 19444), (39, 19717), (42, 19759), (56, 19969),

Gene: MrWormie_22 Start: 19258, Stop: 19851, Start Num: 10

Candidate Starts for MrWormie_22:

(8, 19243), (Start: 10 @19258 has 30 MA's), (36, 19543), (39, 19594), (41, 19633), (42, 19636), (46, 19699), (48, 19729),

Gene: Msay19_26 Start: 19564, Stop: 20157, Start Num: 9

Candidate Starts for Msay19_26:

(Start: 7 @19534 has 4 MA's), (Start: 9 @19564 has 25 MA's), (18, 19627), (39, 19900), (42, 19942), (56, 20152),

Gene: Neoevie_22 Start: 20364, Stop: 20957, Start Num: 10

Candidate Starts for Neoevie_22:

(8, 20349), (Start: 10 @20364 has 30 MA's), (36, 20649), (39, 20700), (41, 20739), (42, 20742), (46, 20805), (48, 20835),

Gene: Newt_22 Start: 20105, Stop: 20698, Start Num: 10

Candidate Starts for Newt_22:

(8, 20090), (Start: 10 @20105 has 30 MA's), (36, 20390), (39, 20441), (41, 20480), (42, 20483), (46, 20546), (48, 20576),

Gene: Niagara_24 Start: 21926, Stop: 22525, Start Num: 10

Candidate Starts for Niagara_24:

(Start: 10 @21926 has 30 MA's), (20, 22010), (42, 22304), (43, 22316), (55, 22490),

Gene: Nimi13_22 Start: 20106, Stop: 20699, Start Num: 10

Candidate Starts for Nimi13_22:

(8, 20091), (Start: 10 @20106 has 30 MA's), (36, 20391), (39, 20442), (41, 20481), (42, 20484), (46, 20547), (48, 20577),

Gene: Orchid_22 Start: 17278, Stop: 17868, Start Num: 6

Candidate Starts for Orchid_22:

(1, 17209), (3, 17248), (4, 17257), (Start: 6 @17278 has 7 MA's), (29, 17500), (30, 17512), (31, 17533), (35, 17581), (49, 17752), (50, 17764),

Gene: PatrickStar_22 Start: 17278, Stop: 17868, Start Num: 6

Candidate Starts for PatrickStar_22:

(1, 17209), (3, 17248), (4, 17257), (Start: 6 @17278 has 7 MA's), (29, 17500), (30, 17512), (31, 17533), (35, 17581), (49, 17752), (50, 17764),

Gene: Philon9_26 Start: 23727, Stop: 24323, Start Num: 10

Candidate Starts for Philon9_26:

(Start: 10 @23727 has 30 MA's), (16, 23760), (18, 23787), (45, 24153), (50, 24222),

Gene: PierreThree_25 Start: 20255, Stop: 20848, Start Num: 9

Candidate Starts for PierreThree_25:

(5, 20210), (Start: 7 @20225 has 4 MA's), (Start: 9 @20255 has 25 MA's), (18, 20318), (37, 20576), (42, 20633), (56, 20843),

Gene: PokyPuppy_24 Start: 20140, Stop: 20733, Start Num: 9

Candidate Starts for PokyPuppy_24:

(Start: 7 @20110 has 4 MA's), (Start: 9 @20140 has 25 MA's), (24, 20242), (56, 20728),

Gene: Poland_28 Start: 19540, Stop: 20133, Start Num: 9

Candidate Starts for Poland_28:

(Start: 7 @19510 has 4 MA's), (Start: 9 @19540 has 25 MA's), (18, 19603), (39, 19876), (42, 19918), (56, 20128),

Gene: RemRem_26 Start: 19377, Stop: 19970, Start Num: 9

Candidate Starts for RemRem_26:

(Start: 7 @19347 has 4 MA's), (Start: 9 @19377 has 25 MA's), (18, 19440), (39, 19713), (42, 19755), (56, 19965),

Gene: Reynauld_28 Start: 20187, Stop: 20765, Start Num: 14

Candidate Starts for Reynauld_28:

(Start: 14 @20187 has 2 MA's), (15, 20196), (19, 20253), (29, 20382), (32, 20430), (33, 20436), (50, 20652),

Gene: RobinSparkles_25 Start: 17889, Stop: 18479, Start Num: 6

Candidate Starts for RobinSparkles_25:

(1, 17820), (3, 17859), (4, 17868), (Start: 6 @17889 has 7 MA's), (29, 18111), (30, 18123), (31, 18144), (35, 18192), (49, 18363), (50, 18375), (54, 18423),

Gene: RoyalG_26 Start: 19875, Stop: 20468, Start Num: 9

Candidate Starts for RoyalG_26:

(Start: 7 @19845 has 4 MA's), (Start: 9 @19875 has 25 MA's), (39, 20211), (42, 20253), (48, 20346), (53, 20382),

Gene: Sam12_25 Start: 19377, Stop: 19970, Start Num: 9

Candidate Starts for Sam12_25:

(Start: 7 @19347 has 4 MA's), (Start: 9 @19377 has 25 MA's), (18, 19440), (39, 19713), (42, 19755), (56, 19965),

Gene: Shelley_22 Start: 19582, Stop: 20175, Start Num: 10

Candidate Starts for Shelley_22:

(8, 19567), (Start: 10 @19582 has 30 MA's), (36, 19867), (39, 19918), (41, 19957), (42, 19960), (46, 20023), (48, 20053),

Gene: Sombrero_25 Start: 19418, Stop: 20011, Start Num: 9

Candidate Starts for Sombrero_25:

(Start: 7 @19388 has 4 MA's), (Start: 9 @19418 has 25 MA's), (39, 19754), (42, 19796), (56, 20006),

Gene: Squibbles_25 Start: 20240, Stop: 20833, Start Num: 9
Candidate Starts for Squibbles_25:
(Start: 7 @20210 has 4 MA's), (Start: 9 @20240 has 25 MA's), (18, 20303), (39, 20576), (42, 20618),
(56, 20828),

Gene: SteveFrench_25 Start: 20071, Stop: 20664, Start Num: 9
Candidate Starts for SteveFrench_25:
(Start: 7 @20041 has 4 MA's), (Start: 9 @20071 has 25 MA's), (39, 20407), (42, 20449), (48, 20542),
(53, 20578),

Gene: Sticker17_22 Start: 20106, Stop: 20699, Start Num: 10
Candidate Starts for Sticker17_22:
(8, 20091), (Start: 10 @20106 has 30 MA's), (36, 20391), (39, 20442), (41, 20481), (42, 20484), (46,
20547), (48, 20577),

Gene: Teal_22 Start: 20082, Stop: 20675, Start Num: 10
Candidate Starts for Teal_22:
(8, 20067), (Start: 10 @20082 has 30 MA's), (36, 20367), (39, 20418), (41, 20457), (42, 20460), (46,
20523), (48, 20553),

Gene: Teatealatte_24 Start: 21871, Stop: 22470, Start Num: 10
Candidate Starts for Teatealatte_24:
(Start: 10 @21871 has 30 MA's), (20, 21955), (42, 22249), (43, 22261), (55, 22435),

Gene: Teech_24 Start: 21672, Stop: 22271, Start Num: 10
Candidate Starts for Teech_24:
(Start: 10 @21672 has 30 MA's), (20, 21756), (43, 22062), (49, 22158), (55, 22236),

Gene: Tredge_24 Start: 21871, Stop: 22470, Start Num: 10
Candidate Starts for Tredge_24:
(Start: 10 @21871 has 30 MA's), (20, 21955), (42, 22249), (43, 22261), (55, 22435),

Gene: Trogglehumper_42 Start: 26607, Stop: 27188, Start Num: 14
Candidate Starts for Trogglehumper_42:
(Start: 14 @26607 has 2 MA's), (17, 26658), (25, 26703), (27, 26754), (28, 26784), (29, 26793), (30,
26805), (35, 26874), (40, 26937), (50, 27072),

Gene: Woes_22 Start: 20616, Stop: 21209, Start Num: 10
Candidate Starts for Woes_22:
(8, 20601), (Start: 10 @20616 has 30 MA's), (36, 20901), (39, 20952), (41, 20991), (42, 20994), (46,
21057), (48, 21087),