Pham 1654


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 1654 Report

This analysis was run 04/05/24 on database version 557.
Pham number 1654 has 57 members, 3 are drafts.
Phages represented in each track:

- Track 1 : Quasimodo_25, InterFolia_32, Mikro_23, NoodleTree_24, YoungMoneyMata_25, Bangla1971_24, SmallFry_25, Ghost_25, Phusco_25, InigoMontoya_26, SilverDipper_26, StephanieG_25, Adlitam_25, Ading_25, Kamryn_25, Ātlantean_25, Amātaga_25, Guwapp_25, Janiyra_25, Jemmno_25, ArcherS7_24, CindyLou_25, Jaygup_25, Audrick_27, Shnickers_25, Littleton_25, Specks_30, Derek_26, Latch_25, Tōtoise16_24, Patter_25, Rahel_25, Tyke_27, Phlegm_27, LifeSavor_26, ShiaLabeouf 25, ValleyTerrace_25, Dañdelion $2 \overline{9}$, Gamgam_25, Momo_24, Capablanca_27, DTDevon_26, Naija_25, Shifa_22, RoMag_20, Pier_27, Pivoine_25
- Track 2 : Colt_25
- Track 3 : IkeLoa_21, BeanWater_21
- Track 4 : Spec_23, Matsumoto_24, Chomp_23, Essence_24
- Track 5 : HyRo_24, LolaVinca_28, DirtMonster_24


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

The start number called the most often in the published annotations is 1 , it was called in 49 of the 54 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ading_25, Adlitam_25, Amataga_25, ArcherS7_24, Atlantean_25, Audrick_27, Bangla1971_24, BeānWater_21, Capablanca_27, CindyLou_25, DTDevon_26, Dandelion_29, Derek_26, Gamgam_25, Ghost_25, Guwapp_25, IkeLoa 21, InigoMontōya_26, IntēFolia_32, Janiyra_25, Jāygup_25, Jemmno_25, Kamryn_25, Latch_25, LifeSavor_26, Littleton_25, Mikro_23, Momo_24, Naija_25, NoodleTree_24, Patter_25, Phlegm_27, Phusco_25, Pier_27, Pivoine_25, Quasimodo_25, Rahel_25, RoMag_20, ShiaLabeouf_25, Shifa_22, Shnickers_25, SilverDipper_26, SmalliFry_25, Specks_30, StephaniēG_25, Tortoise16_24, Tyke_27, ValleyTerrace_25, YoungMoneyMata_25,

Genes that have the "Most Annotated" start but do not call it:
-Chomp_23, DirtMonster_24, Essence_24, HyRo_24, LolaVinca_28, Matsumoto_24, Spec_23,

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

- Colt_25,


## Summary by start number:

Start 1:

- Found in 56 of 57 ( $98.2 \%$ ) of genes in pham
- Manual Annotations of this start: 49 of 54
- Called $87.5 \%$ of time when present
- Phage (with cluster) where this start called: Ading_25 (C1), Adlitam_25 (C1), Amataga 25 (C1), ArcherS7_24 (C1), Atlantean_25 (C1), Audrick 27 (C1), Bangla1971_24 (C1), BeanWater_21 (C1), Capāblanca_27 (C1), CindyLou 25 (C1), DTDevon_2 $\overline{6}$ (C1), Dandelion_29 (C1), Derek_26 (C1), Gamgam_25 (C1), Ghost_25 (C1), Guwapp 25 (C1), IkeLoa_21 (C1), InigoMontoya_26 (C1), InterFolia_32 (C1), Janiyra_25 (C1), Jaygup_25 (C1), Jemmno_25 (C1), Kamryn_25 (C1), Latch_25
(C1), LifeSavor_26 (C1), Littleton_25 (C1), Mikro_23 (C1), Momo_24 (C1), Naija_25 (C1), NoodleTreee_24 (C1), Patter_25 (C1), Phlegm_27 (C1), Phusco_25 (C1), Pier_27 (C1), Pivoine_25 (C1), Quasimodo_25 (C1), Rahel_25 (C1), RoMag_20 (C1), ShiaLabeouf_25 (C1), Shifa_22 (C1), Shnickers_25 (C1), SilverDipper 26 (C1), SmallFry 25 (C1), Specks_3̄ (C1), StephanieG_25 (C1), Tortoise16_24 (C1), Tyke_27(C1), ValleyTerrace_25 (C1), YoungMōneyMata_25 (C1),

Start 2:

- Found in 56 of 57 ( $98.2 \%$ ) of genes in pham
- Manual Annotations of this start: 3 of 54
- Called $5.4 \%$ of time when present
- Phage (with cluster) where this start called: DirtMonster_24 (C1), HyRo_24 (C1), LolaVinca_28 (C1),

Start 4:

- Found in 57 of 57 ( $100.0 \%$ ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 1.8\% of time when present
- Phage (with cluster) where this start called: Colt_25 (C1),

Start 5:

- Found in 56 of 57 ( $98.2 \%$ ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called $7.1 \%$ of time when present
- Phage (with cluster) where this start called: Chomp_23 (C1), Essence_24 (C1),

Matsumoto_24 (C1), Spec_23 (C1),

## Summary by clusters:

There is one cluster represented in this pham: C1
Info for manual annotations of cluster C1:

- Start number 1 was manually annotated 49 times for cluster C1.
- Start number 2 was manually annotated 3 times for cluster C1.
- Start number 4 was manually annotated 1 time for cluster C1.
-Start number 5 was manually annotated 1 time for cluster C1.


## Gene Information:

Gene: Ading_25 Start: 7585, Stop: 8097, Start Num: 1
Candidate Starts for Ading_25:
(Start: 1 @7585 has 49 MA's), (Start: 2 @ 7597 has 3 MA's), (Start: 4 @7633 has 1 MA's), (Start: 5 @7714 has 1 MA's), (6, 7756), (7, 7789), (9, 7849), (10, 7906), (12, 7978),

Gene: Adlitam_25 Start: 7602, Stop: 8114, Start Num: 1
Candidate Starts for Adlitam_25:
(Start: 1 @7602 has 49 MA's), (Start: 2 @7614 has 3 MA's), (Start: 4 @7650 has 1 MA's), (Start: 5 @7731 has 1 MA's), (6, 7773), (7, 7806), (9, 7866), (10, 7923), (12, 7995),

Gene: Amataga_25 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for Amataga_25:
(Start: 1 @ 7606 has 49 MA's), (Start: 2 @ 7618 has 3 MA's), (Start: 4 @ 7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: ArcherS7_24 Start: 7602, Stop: 8114, Start Num: 1
Candidate Starts for ArcherS7_24:
(Start: 1 @7602 has 49 MA's), (Start: 2 @7614 has 3 MA's), (Start: 4 @7650 has 1 MA's), (Start: 5 @7731 has 1 MA's), (6, 7773), (7, 7806), (9, 7866), (10, 7923), (12, 7995),

Gene: Atlantean_25 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for Atlantean_25:
(Start: 1 @7606 has 49 MA's), (Start: 2 @7618 has 3 MA's), (Start: 4 @7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: Audrick_27 Start: 7585, Stop: 8097, Start Num: 1
Candidate Starts for Audrick_27:
(Start: 1 @ 7585 has 49 MA's), (Start: 2 @ 7597 has 3 MA's), (Start: 4 @ 7633 has 1 MA's), (Start: 5 @7714 has 1 MA's), (6, 7756), (7, 7789), (9, 7849), (10, 7906), (12, 7978),

Gene: Bangla1971_24 Start: 7602, Stop: 8114, Start Num: 1
Candidate Starts for Bangla1971_24:
(Start: 1 @7602 has 49 MA's), (Start: 2 @7614 has 3 MA's), (Start: 4 @7650 has 1 MA's), (Start: 5 @7731 has 1 MA's), (6, 7773), (7, 7806), (9, 7866), (10, 7923), (12, 7995),

Gene: BeanWater_21 Start: 7716, Stop: 8228, Start Num: 1
Candidate Starts for BeanWater_21:
(Start: 1 @ 7716 has 49 MA's), (Start: 2 @ 7728 has 3 MA's), (Start: 4 @ 7764 has 1 MA's), (Start: 5 @7845 has 1 MA's), (7, 7920), (9, 7980), (10, 8037), (12, 8109),

Gene: Capablanca_27 Start: 8731, Stop: 9243, Start Num: 1
Candidate Starts for Capablanca_27:
(Start: 1 @8731 has 49 MA's), (Start: 2 @8743 has 3 MA's), (Start: 4 @8779 has 1 MA's), (Start: 5 @8860 has 1 MA's), (6, 8902), (7, 8935), (9, 8995), (10, 9052), (12, 9124),

Gene: Chomp_23 Start: 7735, Stop: 8118, Start Num: 5
Candidate Starts for Chomp_23:
(Start: 1 @7606 has 49 MA's), (Start: 2 @ 7618 has 3 MA's), (Start: 4 @ 7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: CindyLou_25 Start: 7606, Stop: 8118, Start Num: 1

Candidate Starts for CindyLou_25:
(Start: 1 @7606 has 49 MA's), (Start: 2 @7618 has 3 MA's), (Start: 4 @7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: Colt_25 Start: 9003, Stop: 9452, Start Num: 4
Candidate Starts for Colt_25:
(3, 8985), (Start: 4 @9003 has 1 MA's), (8, 9183), (9, 9201), (10, 9258), (11, 9327),
Gene: DTDevon_26 Start: 8770, Stop: 9282, Start Num: 1
Candidate Starts for DTDevon_26:
(Start: 1 @8770 has 49 MA's), (Start: 2 @8782 has 3 MA's), (Start: 4 @8818 has 1 MA's), (Start: 5 @8899 has 1 MA's), (6, 8941), (7, 8974), (9, 9034), (10, 9091), (12, 9163),

Gene: Dandelion_29 Start: 9465, Stop: 9977, Start Num: 1
Candidate Starts for Dandelion_29:
(Start: 1 @9465 has 49 MA's), (Start: 2 @9477 has 3 MA's), (Start: 4 @9513 has 1 MA's), (Start: 5 @9594 has 1 MA's), (6, 9636), (7, 9669), (9, 9729), (10, 9786), (12, 9858),

Gene: Derek_26 Start: 7563, Stop: 8075, Start Num: 1
Candidate Starts for Derek_26:
(Start: 1 @7563 has 49 MA's), (Start: 2 @ 7575 has 3 MA's), (Start: 4 @7611 has 1 MA's), (Start: 5 @7692 has 1 MA's), (6, 7734), (7, 7767), (9, 7827), (10, 7884), (12, 7956),

Gene: DirtMonster_24 Start: 8707, Stop: 9207, Start Num: 2
Candidate Starts for DirtMonster_24:
(Start: 1 @8695 has 49 MA's), (Start: 2 @8707 has 3 MA's), (Start: 4 @8743 has 1 MA's), (Start: 5 @8824 has 1 MA's), (6, 8866), (7, 8899), (9, 8959), (10, 9016), (12, 9088),

Gene: Essence_24 Start: 7457, Stop: 7840, Start Num: 5 Candidate Starts for Essence_24:
(Start: 1 @7328 has 49 MA's), (Start: 2 @ 7340 has 3 MA's), (Start: 4 @ 7376 has 1 MA's), (Start: 5 @7457 has 1 MA's), (6, 7499), (7, 7532), (9, 7592), (10, 7649), (12, 7721),

Gene: Gamgam_25 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for Gamgam_25:
(Start: 1 @7606 has 49 MA's), (Start: 2 @7618 has 3 MA's), (Start: 4 @7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: Ghost_25 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for Ghost_25:
(Start: 1 @ 7606 has 49 MA's), (Start: 2 @ 7618 has 3 MA's), (Start: 4 @ 7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: Guwapp_25 Start: 7563, Stop: 8075, Start Num: 1
Candidate Starts for Guwapp_25:
(Start: 1 @ 7563 has 49 MA's), (Start: 2 @ 7575 has 3 MA's), (Start: 4 @ 7611 has 1 MA's), (Start: 5 @7692 has 1 MA's), (6, 7734), (7, 7767), (9, 7827), (10, 7884), (12, 7956),

Gene: HyRo_24 Start: 8353, Stop: 8853, Start Num: 2
Candidate Starts for HyRo_24:
(Start: 1 @8341 has 49 MA's), (Start: 2 @8353 has 3 MA's), (Start: 4 @8389 has 1 MA's), (Start: 5 @8470 has 1 MA's), (6, 8512), (7, 8545), (9, 8605), (10, 8662), (12, 8734),

Gene: IkeLoa_21 Start: 7452, Stop: 7964, Start Num: 1
Candidate Starts for IkeLoa_21:
(Start: 1 @ 7452 has 49 MA's), (Start: 2 @ 7464 has 3 MA's), (Start: $4 @ 7500$ has 1 MA's), (Start: 5 @7581 has 1 MA's), (7, 7656), (9, 7716), (10, 7773), (12, 7845),

Gene: InigoMontoya_26 Start: 7567, Stop: 8079, Start Num: 1
Candidate Starts for InigoMontoya_26:
(Start: 1 @ 7567 has 49 MA's), (Start: 2 @ 7579 has 3 MA's), (Start: $4 @ 7615$ has 1 MA's), (Start: 5 @7696 has 1 MA's), (6, 7738), (7, 7771), (9, 7831), (10, 7888), (12, 7960),

Gene: InterFolia_32 Start: 10257, Stop: 10769, Start Num: 1
Candidate Starts for InterFolia_32:
(Start: 1 @10257 has 49 MA's), (Start: 2 @10269 has 3 MA's), (Start: 4 @10305 has 1 MA's), (Start: 5 @10386 has 1 MA's), (6, 10428), (7, 10461), (9, 10521), (10, 10578), (12, 10650),

Gene: Janiyra_25 Start: 7585, Stop: 8097, Start Num: 1
Candidate Starts for Janiyra_25:
(Start: 1 @ 7585 has 49 MA's), (Start: 2 @ 7597 has 3 MA's), (Start: $4 @ 7633$ has 1 MA's), (Start: 5 @7714 has 1 MA's), (6, 7756), (7, 7789), (9, 7849), (10, 7906), (12, 7978),

Gene: Jaygup_25 Start: 7602, Stop: 8114, Start Num: 1
Candidate Starts for Jaygup_25:
(Start: 1 @ 7602 has 49 MA's), (Start: 2 @ 7614 has 3 MA's), (Start: 4 @ 7650 has 1 MA's), (Start: 5 @7731 has 1 MA's), (6, 7773), (7, 7806), (9, 7866), (10, 7923), (12, 7995),

Gene: Jemmno_25 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for Jemmno_25:
(Start: 1 @ 7606 has 49 MA's), (Start: 2 @ 7618 has 3 MA's), (Start: $4 @ 7654$ has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: Kamryn_25 Start: 7930, Stop: 8442, Start Num: 1
Candidate Starts for Kamryn_25:
(Start: 1 @ 7930 has 49 MA's), (Start: 2 @ 7942 has 3 MA's), (Start: 4 @ 7978 has 1 MA's), (Start: 5 @8059 has 1 MA's), (6, 8101), (7, 8134), (9, 8194), (10, 8251), (12, 8323),

Gene: Latch_25 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for Latch_25:
(Start: 1 @ 7606 has 49 MA's), (Start: 2 @ 7618 has 3 MA's), (Start: 4 @ 7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: LifeSavor_26 Start: 7602, Stop: 8114, Start Num: 1
Candidate Starts for LifeSavor_26:
(Start: 1 @ 7602 has 49 MA's), (Start: 2 @ 7614 has 3 MA's), (Start: 4 @ 7650 has 1 MA's), (Start: 5 @7731 has 1 MA's), (6, 7773), (7, 7806), (9, 7866), (10, 7923), (12, 7995),

Gene: Littleton_25 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for Littleton_25:
(Start: 1 @7606 has 49 MA's), (Start: 2 @ 7618 has 3 MA's), (Start: 4 @ 7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: LolaVinca_28 Start: 9375, Stop: 9875, Start Num: 2 Candidate Starts for LolaVinca_28:
(Start: 1 @9363 has 49 MA's), (Start: 2 @9375 has 3 MA's), (Start: 4 @9411 has 1 MA's), (Start: 5 @9492 has 1 MA's), (6, 9534), (7, 9567), (9, 9627), (10, 9684), (12, 9756),

Gene: Matsumoto_24 Start: 7696, Stop: 8079, Start Num: 5
Candidate Starts for Matsumoto_24:
(Start: 1 @7567 has 49 MA's), (Start: 2 @ 7579 has 3 MA's), (Start: 4 @7615 has 1 MA's), (Start: 5 @7696 has 1 MA's), (6, 7738), (7, 7771), (9, 7831), (10, 7888), (12, 7960),

Gene: Mikro_23 Start: 8637, Stop: 9149, Start Num: 1
Candidate Starts for Mikro_23:
(Start: 1 @8637 has 49 MA's), (Start: 2 @8649 has 3 MA's), (Start: 4 @8685 has 1 MA's), (Start: 5 @8766 has 1 MA's), (6, 8808), (7, 8841), (9, 8901), (10, 8958), (12, 9030),

Gene: Momo_24 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for Momo_24:
(Start: 1 @7606 has 49 MA's), (Start: 2 @7618 has 3 MA's), (Start: 4 @7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: Naija_25 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for Naija_25:
(Start: 1 @7606 has 49 MA's), (Start: 2 @ 7618 has 3 MA's), (Start: 4 @7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: NoodleTree_24 Start: 7638, Stop: 8150, Start Num: 1
Candidate Starts for NoodleTree_24:
(Start: 1 @7638 has 49 MA's), (Start: 2 @ 7650 has 3 MA's), (Start: 4 @7686 has 1 MA's), (Start: 5 @7767 has 1 MA's), (6, 7809), (7, 7842), (9, 7902), (10, 7959), (12, 8031),

Gene: Patter_25 Start: 7623, Stop: 8135, Start Num: 1
Candidate Starts for Patter_25:
(Start: 1 @7623 has 49 MA's), (Start: 2 @7635 has 3 MA's), (Start: 4 @7671 has 1 MA's), (Start: 5 @7752 has 1 MA's), (6, 7794), (7, 7827), (9, 7887), (10, 7944), (12, 8016),

Gene: Phlegm_27 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for Phlegm_27:
(Start: 1 @7606 has 49 MA's), (Start: 2 @7618 has 3 MA's), (Start: 4 @7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: Phusco_25 Start: 7602, Stop: 8114, Start Num: 1
Candidate Starts for Phusco_25:
(Start: 1 @7602 has 49 MA's), (Start: 2 @7614 has 3 MA's), (Start: 4 @7650 has 1 MA's), (Start: 5 @7731 has 1 MA's), (6, 7773), (7, 7806), (9, 7866), (10, 7923), (12, 7995),

Gene: Pier_27 Start: 8309, Stop: 8821, Start Num: 1
Candidate Starts for Pier_27:
(Start: 1 @8309 has 49 MA's), (Start: 2 @8321 has 3 MA's), (Start: 4 @8357 has 1 MA's), (Start: 5 @8438 has 1 MA's), (6, 8480), (7, 8513), (9, 8573), (10, 8630), (12, 8702),

Gene: Pivoine_25 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for Pivoine_25:
(Start: 1 @7606 has 49 MA's), (Start: 2 @7618 has 3 MA's), (Start: 4 @7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: Quasimodo_25 Start: 8566, Stop: 9078, Start Num: 1
Candidate Starts for Quasimodo_25:
(Start: 1 @8566 has 49 MA's), (Start: 2 @8578 has 3 MA's), (Start: 4 @8614 has 1 MA's), (Start: 5 @8695 has 1 MA's), (6, 8737), (7, 8770), (9, 8830), (10, 8887), (12, 8959),

Gene: Rahel_25 Start: 7602, Stop: 8114, Start Num: 1
Candidate Starts for Rahel_25:
(Start: 1 @7602 has 49 MA's), (Start: 2 @7614 has 3 MA's), (Start: 4 @7650 has 1 MA's), (Start: 5 @7731 has 1 MA's), (6, 7773), (7, 7806), (9, 7866), (10, 7923), (12, 7995),

Gene: RoMag_20 Start: 7403, Stop: 7915, Start Num: 1
Candidate Starts for RoMag_20:
(Start: 1 @7403 has 49 MA's), (Start: 2 @7415 has 3 MA's), (Start: 4 @7451 has 1 MA's), (Start: 5 @7532 has 1 MA's), (6, 7574), (7, 7607), (9, 7667), (10, 7724), (12, 7796),

Gene: ShiaLabeouf_25 Start: 7602, Stop: 8114, Start Num: 1
Candidate Starts for ShiaLabeouf_25:
(Start: 1 @7602 has 49 MA's), (Start: 2 @7614 has 3 MA's), (Start: 4 @7650 has 1 MA's), (Start: 5 @7731 has 1 MA's), (6, 7773), (7, 7806), (9, 7866), (10, 7923), (12, 7995),

Gene: Shifa_22 Start: 7787, Stop: 8299, Start Num: 1
Candidate Starts for Shifa_22:
(Start: 1 @ 7787 has 49 MA's), (Start: 2 @ 7799 has 3 MA's), (Start: $4 @ 7835$ has 1 MA's), (Start: 5 @7916 has 1 MA's), (6, 7958), (7, 7991), (9, 8051), (10, 8108), (12, 8180),

Gene: Shnickers_25 Start: 7602, Stop: 8114, Start Num: 1
Candidate Starts for Shnickers_25:
(Start: 1 @7602 has 49 MA's), (Start: 2 @7614 has 3 MA's), (Start: 4 @7650 has 1 MA's), (Start: 5 @7731 has 1 MA's), (6, 7773), (7, 7806), (9, 7866), (10, 7923), (12, 7995),

Gene: SilverDipper_26 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for SilverDipper_26:
(Start: 1 @7606 has 49 MA's), (Start: 2 @7618 has 3 MA's), (Start: 4 @7654 has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), (7, 7810), (9, 7870), (10, 7927), (12, 7999),

Gene: SmallFry_25 Start: 7602, Stop: 8114, Start Num: 1
Candidate Starts for SmallFry_25:
(Start: 1 @7602 has 49 MA's), (Start: 2 @7614 has 3 MA's), (Start: 4 @7650 has 1 MA's), (Start: 5 @7731 has 1 MA's), (6, 7773), (7, 7806), (9, 7866), (10, 7923), (12, 7995),

Gene: Spec_23 Start: 7737, Stop: 8120, Start Num: 5
Candidate Starts for Spec_23:
(Start: 1 @7608 has 49 MA's), (Start: 2 @ 7620 has 3 MA's), (Start: 4 @ 7656 has 1 MA's), (Start: 5 @7737 has 1 MA's), (6, 7779), (7, 7812), (9, 7872), (10, 7929), (12, 8001),

Gene: Specks_30 Start: 9440, Stop: 9952, Start Num: 1
Candidate Starts for Specks_30:
(Start: 1 @9440 has 49 MA's), (Start: 2 @9452 has 3 MA's), (Start: 4 @9488 has 1 MA's), (Start: 5 @9569 has 1 MA's), (6, 9611), (7, 9644), (9, 9704), (10, 9761), (12, 9833),

Gene: StephanieG_25 Start: 8334, Stop: 8846, Start Num: 1 Candidate Starts for StephanieG_25:
(Start: 1 @8334 has 49 MA's), (Start: 2 @8346 has 3 MA's), (Start: 4 @8382 has 1 MA's), (Start: 5 @8463 has 1 MA's), ( 6,8505 ), ( 7,8538 ), ( 9,8598 ), ( 10,8655 ), ( 12,8727 ),

Gene: Tortoise16_24 Start: 7602, Stop: 8114, Start Num: 1
Candidate Starts for Tortoise16_24:
(Start: 1 @ 7602 has 49 MA's), (Start: 2 @ 7614 has 3 MA's), (Start: $4 @ 7650$ has 1 MA's), (Start: 5 @7731 has 1 MA's), (6, 7773), (7, 7806), (9, 7866), (10, 7923), (12, 7995),

Gene: Tyke_27 Start: 9014, Stop: 9526, Start Num: 1
Candidate Starts for Tyke_27:
(Start: 1 @9014 has 49 MA's), (Start: 2 @9026 has 3 MA's), (Start: 4 @9062 has 1 MA's), (Start: 5 @9143 has 1 MA's), (6, 9185), (7, 9218), (9, 9278), (10, 9335), (12, 9407),

Gene: ValleyTerrace_25 Start: 7606, Stop: 8118, Start Num: 1
Candidate Starts for ValleyTerrace_25:
(Start: 1 @ 7606 has 49 MA's), (Start: 2 @ 7618 has 3 MA's), (Start: $4 @ 7654$ has 1 MA's), (Start: 5 @7735 has 1 MA's), (6, 7777), ( 7,7810 ), ( 9,7870 ), ( 10,7927 ), (12, 7999),

Gene: YoungMoneyMata_25 Start: 7357, Stop: 7869, Start Num: 1
Candidate Starts for YoungMoneyMata_25:
(Start: 1 @7357 has 49 MA's), (Start: 2 @ 7369 has 3 MA's), (Start: 4 @ 7405 has 1 MA's), (Start: 5 @7486 has 1 MA's), (6, 7528), (7, 7561), (9, 7621), (10, 7678), (12, 7750),

