Pham 85499


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 85499 Report

This analysis was run 04/05/24 on database version 557.
Pham number 85499 has 72 members, 6 are drafts.
Phages represented in each track:

- Track 1 : Weirdo19 47
- Track 2 : Mowgli_3̄̄, Remy19_34, CassieYates_34, Periodt_34, CLED96_34, Avrafan_34, DNAIII_0033, Cherrybomb426_34, Angel_34, Barkley26_34, BruceB_34, Coleslāw_34, ECartman_34, ZōMa_34, DMoney_34, Gomashi_34, Marmie_34, Sizemore_34, Olga_34, S̄weets_34, OctaviousRēx_34, PinkYoshi_34, Gideon_34, Cedasite_34, Kasen3_34, Hotshotbaby7_34, Plagueis_34,
Renaissance_34, Camri_34, Grizzly_34, Jonghyun_34, Halo_34, JorRay_34, Jolene_34, Phish_34, Annihilator_3 $\overline{4}$, Aroostook_3 $\overline{4}$, Jane_3 $\overline{4}$, BQuat_3 $\overline{4}$, Phreak_34, Hope_34, Schiebel_34, Zombie_34, Peeb_34, Chance64_34, Liefie_34, Kareem 34, Crespo_34, Darionha_34, Frosty24_34
- Track $\overline{3}$ : Paito_34
- Track 4 : BPs_34, ShaboiShabazz_34, TomBrady_34
- Track 5 : Rabbs_34, Sneeze_34
- Track 6 : GoldenAsh_34
- Track 7 : LouisV14_36
- Track 8 : Terror_34, Taheera_34
- Track 9 : Avocado_31
- Track 10 : Pace122̄4_31
- Track 11: Cambiare 32
- Track 12 : FlagStaff_31
- Track 13 : MOOREtheMARYer_33, Pinnie_33
- Track 14 : Mercurio_34
- Track 15 : Jolie2_32
- Track 16 : Lemuria_33
- Track 17 : Stargaze_32
- Track 18 : Antsirabe_32


## 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 53 of the 66 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Angel_34, Annihilator_34, Aroostook_34, Avrafan_34, BQuat_34, Barkley26_34, BruceB_34, CLED96_34, Camri_34, CassieYates_34, Cedasite_34, Chance64_34, Cherrybomb426_34, Coleslaw_34, Crespo_34, DMoney_34, DNAIII_0033, Darionha_34, ECartman_34, Frosty24_34, Gideon_34, Gomashi_34, Grizzly_34, Halo_34, Hope_34, Hotshotbaby7_34, Jane_34, Jōlene_34, Jonḡhyun_34, JorRāy_34, Kareem_34, Kasen3_34, Liefie_34, Marmie_34, Mowgli_3̄̄, OctaviousRex_34, ŌIga_34, Paitō_34, Peē_34, Periodt_34, Phish_34, Phreak_34,
PinkYoshi_34, Plagueis_34, Rabbs_34, Remy19_34, Renaissance_34, Schiebē_34, Sizemore_34, Sneeze_34, Sweets_34, Taheera_34, Terror_34, ZoMa_34, Zombie_34,

Genes that have the "Most Annotated" start but do not call it:
-BPs_34, GoldenAsh_34, LouisV14_36, ShaboiShabazz_34, TomBrady_34,
Genes that do not have the "Most Annotated" start:

- Antsirabe_32, Avocado_31, Cambiare_32, FlagStaff_31, Jolie2_32, Lemuria_33, MOOREthēMARYer_33, Mercurio_34, Pace1224_31, P-Pinnie_33, Stargaze_32, Weirdo19_47,


## Summary by start number:

Start 4:

- Found in 2 of 72 ( $2.8 \%$ ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called $100.0 \%$ of time when present
- Phage (with cluster) where this start called: Jolie2_32 (G4), Lemuria_33 (G4),

Start 5:

- Found in 1 of 72 ( $1.4 \%$ ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called $100.0 \%$ of time when present
- Phage (with cluster) where this start called: LouisV14_36 (G1),

Start 6:

- Found in 3 of 72 ( 4.2\%) of genes in pham
- No Manual Annotations of this start.
- Called $33.3 \%$ of time when present
- Phage (with cluster) where this start called: Stargaze_32 (G5),

Start 7:

- Found in 3 of 72 ( $4.2 \%$ ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called $33.3 \%$ of time when present
- Phage (with cluster) where this start called: Mercurio_34 (G4),

Start 8:

- Found in 9 of 72 ( $12.5 \%$ ) of genes in pham
- Manual Annotations of this start: 3 of 66
- Called $44.4 \%$ of time when present
- Phage (with cluster) where this start called: Antsirabe_32 (G5), Cambiare_32 (G2),

FlagStaff_31 (G2), Pace1224_31 (G2),
Start 10:

- Found in 60 of 72 ( 83.3\% ) of genes in pham
- Manual Annotations of this start: 53 of 66
- Called $91.7 \%$ of time when present
- Phage (with cluster) where this start called: Angel 34 (G1), Annihilator_34 (G1), Aroostook 34 (G1), Avrafan_34 (G1), BQuat_34 (G1), Barkley26_34 (G1), BruceB_3̄̄ (G1), CLED96_34 (G1), Camri_3̄̄ (G1), CassieYates_34 (G1), Cedasite_34 (G1), Chance64_34 (G1), Cherrybomb426_34 (G1), Coleslaw_34 (G1), Crespo_34 (G1), DMoney_34 (G1), DNAIII_0033 (G1), Darionha_34 (G1), ECartman_34 (G1), Frosty24_34 (G1), Gideon_34 (G1), Gomashí34 (G1), Grizzly_34(G1), Halo_34 (G1), Hope 34 (G1), Hotshotbaby7_34 (G1), Jane_34 (G1), Jolene_34 (G1), Jonghyun_34 (G1), JorRay_34 (G1), Kareem_34 (G1), Kasen3_34 (G1), Liefie_34 (G1), Marmie_34 (G1), Mowgli_34 (G1), OctaviousRex_34 (G1), Olga_34 (G1), Paito_34 (G1), Peeb_34 (G1), Periodt_34
(G1), Phish 34 (G1), Phreak 34 (G1), PinkYoshi_34 (G1), Plagueis 34 (G1),
Rabbs_34 (G1), Remy19_34(G1), Renaissance_34 (G1), Schiebel_34 (G1), Sizemore_34 (G1), Sneeze_34 (G1), Sweets_34 (G1), Taheera_34 (G1), Terror_34 (G1), ZoMa_34 (G1), Zombie_34 (G1),

Start 11:

- Found in 1 of 72 ( $1.4 \%$ ) of genes in pham
- No Manual Annotations of this start.
- Called $100.0 \%$ of time when present
- Phage (with cluster) where this start called: Weirdo19_47 (AH),

Start 13:

- Found in 11 of 72 ( $15.3 \%$ ) of genes in pham
- Manual Annotations of this start: 3 of 66
- Called $27.3 \%$ of time when present
- Phage (with cluster) where this start called: Avocado_31 (G2),

MOOREtheMARYer_33 (G3), Pinnie_33 (G3),
Start 14:

- Found in 57 of 72 ( 79.2\%) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called $1.8 \%$ of time when present
- Phage (with cluster) where this start called: GoldenAsh_34 (G1),


## Start 16:

- Found in 60 of 72 ( 83.3\% ) of genes in pham
- Manual Annotations of this start: 3 of 66
- Called $5.0 \%$ of time when present
- Phage (with cluster) where this start called: BPs_34 (G1), ShaboiShabazz_34 (G1),

TomBrady_34 (G1),

## Summary by clusters:

There are 6 clusters represented in this pham: G5, G4, G3, G2, G1, AH,

Info for manual annotations of cluster G1:

- Start number 5 was manually annotated 1 time for cluster G1.
- Start number 10 was manually annotated 53 times for cluster G1.
-Start number 14 was manually annotated 1 time for cluster G1.
- Start number 16 was manually annotated 3 times for cluster G1.

Info for manual annotations of cluster G2:

- Start number 8 was manually annotated 2 times for cluster G2.
- Start number 13 was manually annotated 1 time for cluster G2.

Info for manual annotations of cluster G3:

- Start number 13 was manually annotated 2 times for cluster G3.

Info for manual annotations of cluster G4:

- Start number 4 was manually annotated 1 time for cluster G4.
- Start number 7 was manually annotated 1 time for cluster G4.

Info for manual annotations of cluster G5:

- Start number 8 was manually annotated 1 time for cluster G5.


## Gene Information:

Gene: Angel_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Angel_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Annihilator_34 Start: 29489, Stop: 29746, Start Num: 10
Candidate Starts for Annihilator_34:
(Start: 10 @29489 has 53 MA's), (12, 29492), (Start: 14 @29495 has 1 MA's), (Start: 16 @29501 has 3 MA's), (23, 29630), (27, 29672),

Gene: Antsirabe_32 Start: 29568, Stop: 29807, Start Num: 8
Candidate Starts for Antsirabe_32:
(Start: 8 @29568 has 3 MA's), (Start: 13 @29577 has 3 MA's), (19, 29619), (20, 29646), (21, 29661), (25, 29724),

Gene: Aroostook_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Aroostook_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Avocado_31 Start: 29572, Stop: 29802, Start Num: 13
Candidate Starts for Avocado_31:
(1, 28903), (2, 28972), (3, 29260), (Start: 13 @29572 has 3 MA's), (19, 29614), (20, 29641), (21,
29656), (22, 29683), (25, 29719),

Gene: Avrafan_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Avrafan_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: BPs_34 Start: 29510, Stop: 29755, Start Num: 16
Candidate Starts for BPs_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: BQuat_34 Start: 29489, Stop: 29746, Start Num: 10 Candidate Starts for BQuat_34:
(Start: 10 @29489 has 53 MA's), (12, 29492), (Start: 14 @29495 has 1 MA's), (Start: 16 @29501 has 3 MA's), (23, 29630), (27, 29672),

Gene: Barkley26_34 Start: 29520, Stop: 29777, Start Num: 10
Candidate Starts for Barkley26_34:
(Start: 10 @29520 has 53 MA's), (12, 29523), (Start: 14 @29526 has 1 MA's), (Start: 16 @29532 has 3 MA's), (23, 29661), (27, 29703),

Gene: BruceB_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for BruceB_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: CLED96_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for CLED96_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Cambiare_32 Start: 30030, Stop: 30269, Start Num: 8 Candidate Starts for Cambiare_32:
(Start: 8 @30030 has 3 MA's), (Start: 13 @30039 has 3 MA's), (20, 30108), (22, 30150), (25, 30186),
Gene: Camri_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Camri_34:
(Start: 10 @29498 has 53 M $\bar{A}$ 's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: CassieYates_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for CassieYates_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Cedasite_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Cedasite_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Chance64_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Chance64_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Cherrybomb426_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Cherrybomb426_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Coleslaw_34 Start: 29489, Stop: 29746, Start Num: 10

Candidate Starts for Coleslaw_34:
(Start: 10 @29489 has 53 MA's), (12, 29492), (Start: 14 @29495 has 1 MA's), (Start: 16 @29501 has 3 MA's), (23, 29630), (27, 29672),

Gene: Crespo_34 Start: 29499, Stop: 29756, Start Num: 10
Candidate Starts for Crespo_34:
(Start: 10 @29499 has 53 MA's), (12, 29502), (Start: 14 @29505 has 1 MA's), (Start: 16 @29511 has 3 MA's), (23, 29640), (27, 29682),

Gene: DMoney_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for DMoney_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: DNAII_0033 Start: 28132, Stop: 28389, Start Num: 10
Candidate Starts for DNAIII_0033:
(Start: 10 @28132 has 53 MA's), (12, 28135), (Start: 14 @28138 has 1 MA's), (Start: 16 @28144 has 3 MA's), (23, 28273), (27, 28315),

Gene: Darionha_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Darionha_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: ECartman_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for ECartman_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: FlagStaff_31 Start: 29350, Stop: 29589, Start Num: 8
Candidate Starts for FlagStaff_31:
(Start: 8 @29350 has 3 MA's), (Start: 13 @29359 has 3 MA's), (18, 29395), (19, 29401), (20, 29428), $(21,29443),(22,29470),(25,29506)$,

Gene: Frosty24_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Frosty24_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Gideon_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Gideon_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: GoldenAsh_34 Start: 29504, Stop: 29755, Start Num: 14
Candidate Starts for GoldenAsh_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Gomashi_34 Start: 29499, Stop: 29756, Start Num: 10
Candidate Starts for Gomashi_34:
(Start: 10 @29499 has 53 MA's), (12, 29502), (Start: 14 @29505 has 1 MA's), (Start: 16 @29511 has 3 MA's), (23, 29640), (27, 29682),

Gene: Grizzly_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Grizzly_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Halo_34 Start: 29493, Stop: 29750, Start Num: 10
Candidate Starts for Halo_34:
(Start: 10 @29493 has 53 MA's), (12, 29496), (Start: 14 @29499 has 1 MA's), (Start: 16 @29505 has 3 MA's), (23, 29634), (27, 29676),

Gene: Hope_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Hope_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Hotshotbaby7_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Hotshotbaby7_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Jane_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Jane_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Jolene_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Jolene_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Jolie2_32 Start: 28378, Stop: 28671, Start Num: 4
Candidate Starts for Jolie2_32:
(Start: 4 @28378 has 1 MA's), (6, 28414), (Start: 7 @28423 has 1 MA's), (Start: 8 @28426 has 3 MA's), (Start: 13 @28435 has 3 MA's),

Gene: Jonghyun_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Jonghyun_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: JorRay_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for JorRay_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Kareem_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Kareem_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Kasen3_34 Start: 29499, Stop: 29756, Start Num: 10
Candidate Starts for Kasen3_34:
(Start: 10 @29499 has 53 MA's), (12, 29502), (Start: 14 @29505 has 1 MA's), (Start: 16 @29511 has 3 MA's), (23, 29640), (27, 29682),

Gene: Lemuria_33 Start: 29447, Stop: 29740, Start Num: 4
Candidate Starts for Lemuria 33:
(Start: 4 @29447 has 1 MA's), (6, 29483), (Start: 7 @29492 has 1 MA's), (Start: 8 @29495 has 3 MA's), (Start: 13 @29504 has 3 MA's),

Gene: Liefie_34 Start: 29496, Stop: 29753, Start Num: 10
Candidate Starts for Liefie_34:
(Start: 10 @29496 has 53 MA's), (12, 29499), (Start: 14 @29502 has 1 MA's), (Start: 16 @29508 has 3 MA's), (23, 29637), (27, 29679),

Gene: LouisV14_36 Start: 31739, Stop: 32020, Start Num: 5
Candidate Starts for LouisV14_36:
(Start: 5 @31739 has 1 MA's), (Start: 10 @31763 has 53 MA's), (12, 31766), (Start: 14 @31769 has 1 MA's), (Start: 16 @31775 has 3 MA's), (23, 31904), (27, 31946),

Gene: MOOREtheMARYer_33 Start: 29854, Stop: 30084, Start Num: 13
Candidate Starts for MOOREtheMARYer_33:
(Start: 8 @29845 has 3 MA's), (Start: 13 @29854 has 3 MA's), (19, 29896), (20, 29923), (21, 29938), (22, 29965), (25, 30001),

Gene: Marmie_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Marmie_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Mercurio_34 Start: 30005, Stop: 30259, Start Num: 7
Candidate Starts for Mercurio_34:
(Start: 7 @30005 has 1 MA's), (Start: 13 @30017 has 3 MA's), (26, 30179),
Gene: Mowgli_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Mowgli_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: OctaviousRex_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for OctaviousRex_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Olga_34 Start: 29498, Stop: 29755, Start Num: 10 Candidate Starts for Olga_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Pace1224_31 Start: 29350, Stop: 29589, Start Num: 8
Candidate Starts for Pace1224_31:
(Start: 8 @29350 has 3 MA's), (Start: 13 @29359 has 3 MA's), (19, 29401), (20, 29428), (21, 29443), (22, 29470), (25, 29506),

Gene: Paito_34 Start: 29679, Stop: 29936, Start Num: 10

Candidate Starts for Paito_34:
(Start: 10 @29679 has 53 MA's), (12, 29682), (Start: 16 @29691 has 3 MA's), (27, 29862),
Gene: Peeb_34 Start: 29498, Stop: 29755, Start Num: 10 Candidate Starts for Peeb_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Periodt_34 Start: 29489, Stop: 29746, Start Num: 10
Candidate Starts for Periodt_34:
(Start: 10 @29489 has 53 MA's), (12, 29492), (Start: 14 @29495 has 1 MA's), (Start: 16 @29501 has 3 MA's), (23, 29630), (27, 29672),

Gene: Phish_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Phish_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Phreak_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Phreak_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: PinkYoshi_34 Start: 29489, Stop: 29746, Start Num: 10
Candidate Starts for PinkYoshi_34:
(Start: 10 @29489 has 53 MA's), (12, 29492), (Start: 14 @29495 has 1 MA's), (Start: 16 @29501 has 3 MA's), (23, 29630), (27, 29672),

Gene: Pinnie_33 Start: 30225, Stop: 30455, Start Num: 13
Candidate Starts for Pinnie_33:
(Start: 8 @30216 has 3 MA's), (Start: 13 @30225 has 3 MA's), (19, 30267), (20, 30294), (21, 30309), (22, 30336), $(25,30372)$,

Gene: Plagueis_34 Start: 29333, Stop: 29590, Start Num: 10
Candidate Starts for Plagueis_34:
(Start: 10 @29333 has 53 MA's), (12, 29336), (Start: 14 @29339 has 1 MA's), (Start: 16 @29345 has 3 MA's), (23, 29474), (27, 29516),

Gene: Rabbs_34 Start: 29581, Stop: 29838, Start Num: 10
Candidate Starts for Rabbs_34:
(Start: 10 @29581 has 53 MA's), (12, 29584), (Start: 14 @29587 has 1 MA's), (Start: 16 @29593 has 3 MA's), (23, 29722),

Gene: Remy19_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Remy 19_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Renaissance_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Renaissance_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Schiebel_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for Schiebel_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: ShaboiShabazz_34 Start: 29510, Stop: 29755, Start Num: 16
Candidate Starts for ShaboiShabazz_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Sizemore_34 Start: 29499, Stop: 29756, Start Num: 10
Candidate Starts for Sizemore_34:
(Start: 10 @29499 has 53 MA's), (12, 29502), (Start: 14 @29505 has 1 MA's), (Start: 16 @29511 has 3 MA's), (23, 29640), (27, 29682),

Gene: Sneeze_34 Start: 29580, Stop: 29837, Start Num: 10
Candidate Starts for Sneeze_34:
(Start: 10 @29580 has 53 MA's), (12, 29583), (Start: 14 @29586 has 1 MA's), (Start: 16 @29592 has 3 MA's), (23, 29721),

Gene: Stargaze_32 Start: 29578, Stop: 29838, Start Num: 6 Candidate Starts for Stargaze_32:
(6, 29578), (Start: 8 @29590 has 3 MA's), (Start: 13 @29599 has 3 MA's), (20, 29680), (21, 29695), (24, 29752),

Gene: Sweets_34 Start: 29493, Stop: 29750, Start Num: 10
Candidate Starts for Sweets_34:
(Start: 10 @29493 has 53 MA's), (12, 29496), (Start: 14 @29499 has 1 MA's), (Start: 16 @29505 has 3 MA's), (23, 29634), (27, 29676),

Gene: Taheera_34 Start: 29616, Stop: 29873, Start Num: 10
Candidate Starts for Taheera_34:
(Start: 10 @29616 has 53 MA's), (12, 29619), (Start: 16 @29628 has 3 MA's), (23, 29757),
Gene: Terror_34 Start: 29616, Stop: 29873, Start Num: 10
Candidate Starts for Terror_34:
(Start: 10 @29616 has 53 MA's), (12, 29619), (Start: 16 @29628 has 3 MA's), (23, 29757),
Gene: TomBrady_34 Start: 29511, Stop: 29756, Start Num: 16
Candidate Starts for TomBrady_34:
(Start: 10 @29499 has 53 MA's), (12, 29502), (Start: 14 @29505 has 1 MA's), (Start: 16 @29511 has 3 MA's), (23, 29640), (27, 29682),

Gene: Weirdo19_47 Start: 35144, Stop: 35377, Start Num: 11
Candidate Starts for Weirdo19_47:
(9, 35138), (11, 35144), (15, 35150), (17, 35162), (26, 35306), (27, 35324), (28, 35357),
Gene: ZoMa_34 Start: 29498, Stop: 29755, Start Num: 10
Candidate Starts for ZoMa_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

Gene: Zombie_34 Start: 29498, Stop: 29755, Start Num: 10

Candidate Starts for Zombie_34:
(Start: 10 @29498 has 53 MA's), (12, 29501), (Start: 14 @29504 has 1 MA's), (Start: 16 @29510 has 3 MA's), (23, 29639), (27, 29681),

