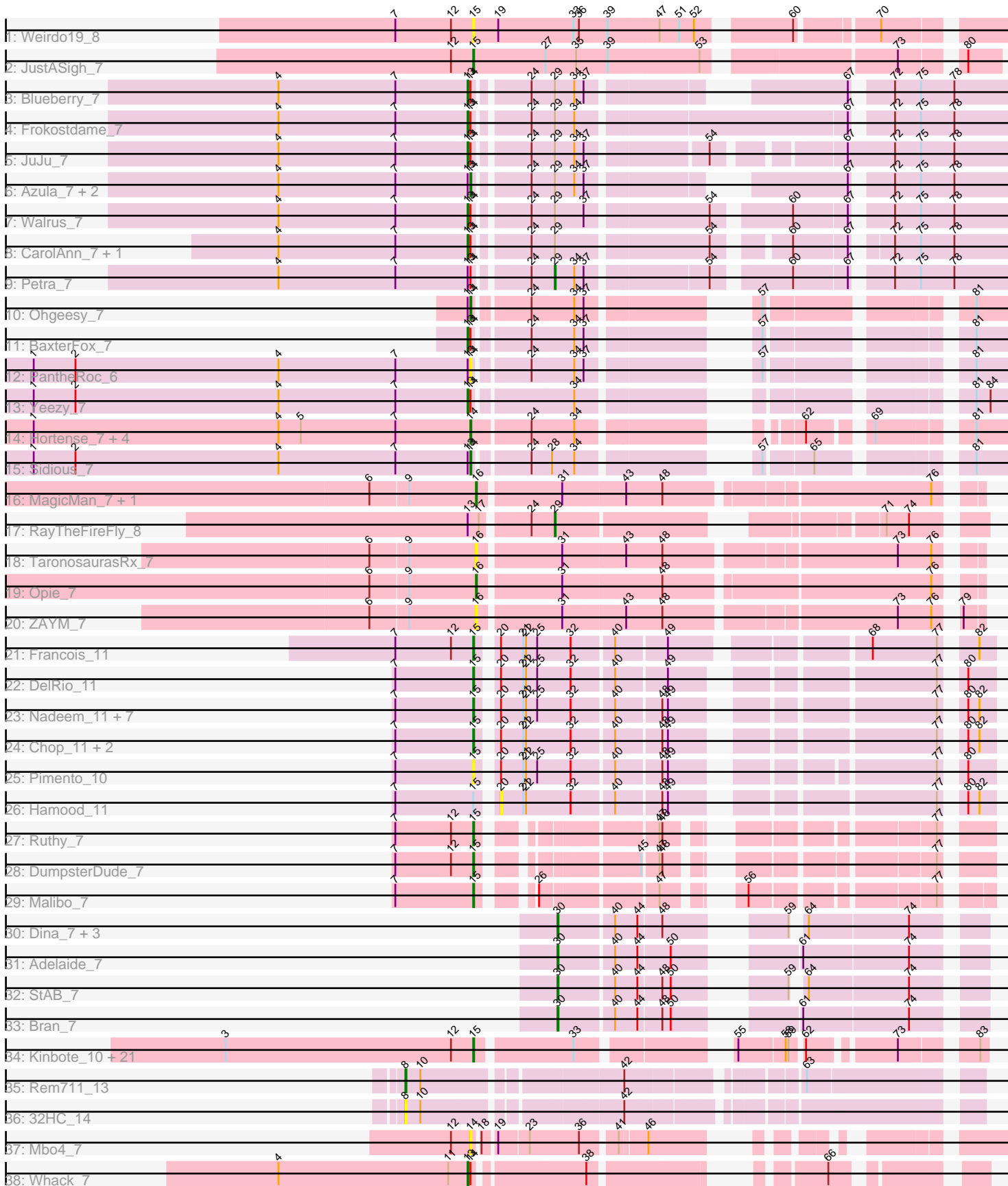


Pham 163555



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 163555 Report

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

Pham number 163555 has 79 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Weirdo19_8
- Track 2 : JustASigh_7
- Track 3 : Blueberry_7
- Track 4 : Frokostdame_7
- Track 5 : JuJu_7
- Track 6 : Azula_7, MissRona_7, Gambino_7
- Track 7 : Walrus_7
- Track 8 : CarolAnn_7, Blino_7
- Track 9 : Petra_7
- Track 10 : Ohgeesy_7
- Track 11 : BaxterFox_7
- Track 12 : PantheRoc_6
- Track 13 : Yeezy_7
- Track 14 : Hortense_7, Shlim410_7, Howe_7, Twinkle_7, Adora_7
- Track 15 : Sidious_7
- Track 16 : MagicMan_7, Schnabeltier_7
- Track 17 : RayTheFireFly_8
- Track 18 : TaronosaurusRx_7
- Track 19 : Opie_7
- Track 20 : ZAYM_7
- Track 21 : Francois_11
- Track 22 : DelRio_11
- Track 23 : Nadeem_11, Bock_11, BetterKatz_11, Brylie_11, WheatThin_11, Mulch_11, NancyRae_11, Parada_11
- Track 24 : Chop_11, GrandSlam_11, Ayotoya_11
- Track 25 : Pimento_10
- Track 26 : Hamood_11
- Track 27 : Ruthy_7
- Track 28 : DumpsterDude_7
- Track 29 : Malibo_7
- Track 30 : Dina_7, Troy_7, SamW_7, Lederberg_7
- Track 31 : Adelaide_7
- Track 32 : StAB_7
- Track 33 : Bran_7
- Track 34 : Kinbote_10, Gravaiilia_10, Luna22_10, Evanesce_10, LilHazelNut_10, DeepSoil15_10, Hadrien_10, Webster2_10, Ein37_10, Gancho_9, Dewey_10, Amymech_10, Giles_10, OBUpride_10, Wishmaker_10, HH92_10, Daegal_11,

Forge_10, Luke_10, Amochick_10, Ubuntu_10, Hail_10

- Track 35 : Rem711_13
- Track 36 : 32HC_14
- Track 37 : Mbo4_7
- Track 38 : Whack_7

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

The start number called the most often in the published annotations is 15, it was called in 39 of the 71 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amochick_10, Amymech_10, Ayotoya_11, BetterKatz_11, Bock_11, Brylie_11, Chop_11, Daegal_11, DeepSoil15_10, DelRio_11, Dewey_10, DumpsterDude_7, Ein37_10, Evanesce_10, Forge_10, Francois_11, Gancho_9, Giles_10, GrandSlam_11, Gravaillia_10, HH92_10, Hadrien_10, Hail_10, JustASigh_7, Kinbote_10, LilHazelNut_10, Luke_10, Luna22_10, Malibo_7, Mulch_11, Nadeem_11, NancyRae_11, OBUpride_10, Parada_11, Pimento_10, Ruthy_7, Ubuntu_10, Webster2_10, WeirDo19_8, WheatThin_11, Wishmaker_10,

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

- Hamood_11,

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

- 32HC_14, Adelaide_7, Adora_7, Azula_7, BaxterFox_7, Blino_7, Blueberry_7, Bran_7, CarolAnn_7, Dina_7, Frokostdame_7, Gambino_7, Hortense_7, Howe_7, JuJu_7, Lederberg_7, MagicMan_7, Mbo4_7, MissRona_7, Ohgeesy_7, Opie_7, PantheRoc_6, Petra_7, RayTheFireFly_8, Rem711_13, SamW_7, Schnabeltier_7, Shlim410_7, Sidious_7, StAB_7, TaronosaurusRx_7, Troy_7, Twinkle_7, Walrus_7, Whack_7, Yeezy_7, ZAYM_7,

Summary by start number:

Start 8:

- Found in 2 of 79 (2.5%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 32HC_14 (Z), Rem711_13 (Z),

Start 13:

- Found in 17 of 79 (21.5%) of genes in pham
- Manual Annotations of this start: 9 of 71
- Called 52.9% of time when present
- Phage (with cluster) where this start called: BaxterFox_7 (CZ3), Blino_7 (CV), Blueberry_7 (CV), CarolAnn_7 (CV), Frokostdame_7 (CV), JuJu_7 (CV), Walrus_7 (CV), Whack_7 (singleton), Yeezy_7 (CZ3),

Start 14:

- Found in 22 of 79 (27.8%) of genes in pham
- Manual Annotations of this start: 10 of 71

- Called 54.5% of time when present
- Phage (with cluster) where this start called: Adora_7 (CZ4), Azula_7 (CV), Gambino_7 (CV), Hortense_7 (CZ4), Howe_7 (CZ4), Mbo4_7 (singleton), MissRona_7 (CV), Ohgeesy_7 (CZ), PantheRoc_6 (CZ3), Shlim410_7 (CZ4), Sidious_7 (CZ7), Twinkle_7 (CZ4),

Start 15:

- Found in 42 of 79 (53.2%) of genes in pham
- Manual Annotations of this start: 39 of 71
- Called 97.6% of time when present
- Phage (with cluster) where this start called: Amochick_10 (Q), Amymech_10 (Q), Ayotoya_11 (DI), BetterKatz_11 (DI), Bock_11 (DI), Brylie_11 (DI), Chop_11 (DI), Daegal_11 (Q), DeepSoil15_10 (Q), DelRio_11 (DI), Dewey_10 (Q), DumpsterDude_7 (DW), Ein37_10 (Q), Evanesce_10 (Q), Forge_10 (Q), Francois_11 (DI), Gancho_9 (Q), Giles_10 (Q), GrandSlam_11 (DI), Gravallia_10 (Q), HH92_10 (Q), Hadrien_10 (Q), Hail_10 (Q), JustASigh_7 (AH), Kinbote_10 (Q), LilHazelnut_10 (Q), Luke_10 (Q), Luna22_10 (Q), Malibo_7 (DW), Mulch_11 (DI), Nadeem_11 (DI), NancyRae_11 (DI), OBUpride_10 (Q), Parada_11 (DI), Pimento_10 (DI), Ruthy_7 (DW), Ubuntu_10 (Q), Webster2_10 (Q), Weirido19_8 (AH), WheatThin_11 (DI), Wishmaker_10 (Q),

Start 16:

- Found in 5 of 79 (6.3%) of genes in pham
- Manual Annotations of this start: 3 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MagicMan_7 (DB), Opie_7 (DB), Schnabeltier_7 (DB), TaronosaurusRx_7 (DB), ZAYM_7 (DB),

Start 20:

- Found in 15 of 79 (19.0%) of genes in pham
- No Manual Annotations of this start.
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Hamood_11 (DI),

Start 29:

- Found in 11 of 79 (13.9%) of genes in pham
- Manual Annotations of this start: 2 of 71
- Called 18.2% of time when present
- Phage (with cluster) where this start called: Petra_7 (CV), RayTheFireFly_8 (DB),

Start 30:

- Found in 7 of 79 (8.9%) of genes in pham
- Manual Annotations of this start: 7 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adelaide_7 (EP), Bran_7 (EP), Dina_7 (EP), Lederberg_7 (EP), SamW_7 (EP), StAB_7 (EP), Troy_7 (EP),

Summary by clusters:

There are 13 clusters represented in this pham: singleton, DI, CZ3, DB, CZ7, CZ4, EP, Q, CZ, AH, DW, Z, CV,

Info for manual annotations of cluster AH:

- Start number 15 was manually annotated 1 time for cluster AH.

Info for manual annotations of cluster CV:

- Start number 13 was manually annotated 6 times for cluster CV.
- Start number 14 was manually annotated 3 times for cluster CV.
- Start number 29 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CZ:

- Start number 14 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ3:

- Start number 13 was manually annotated 2 times for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 14 was manually annotated 5 times for cluster CZ4.

Info for manual annotations of cluster CZ7:

- Start number 14 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DB:

- Start number 16 was manually annotated 3 times for cluster DB.
- Start number 29 was manually annotated 1 time for cluster DB.

Info for manual annotations of cluster DI:

- Start number 15 was manually annotated 13 times for cluster DI.

Info for manual annotations of cluster DW:

- Start number 15 was manually annotated 3 times for cluster DW.

Info for manual annotations of cluster EP:

- Start number 30 was manually annotated 7 times for cluster EP.

Info for manual annotations of cluster Q:

- Start number 15 was manually annotated 22 times for cluster Q.

Info for manual annotations of cluster Z:

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

Gene Information:

Gene: 32HC_14 Start: 9194, Stop: 9727, Start Num: 8

Candidate Starts for 32HC_14:

(Start: 8 @9194 has 1 MA's), (10, 9209), (42, 9401),

Gene: Adelaide_7 Start: 6050, Stop: 6430, Start Num: 30

Candidate Starts for Adelaide_7:

(Start: 30 @6050 has 7 MA's), (40, 6104), (44, 6128), (50, 6161), (61, 6254), (74, 6365),

Gene: Adora_7 Start: 5836, Stop: 6276, Start Num: 14

Candidate Starts for Adora_7:

(1, 5365), (4, 5629), (5, 5653), (7, 5755), (Start: 14 @5836 has 10 MA's), (24, 5896), (34, 5941), (62, 6106), (69, 6157), (81, 6241),

Gene: Amochick_10 Start: 7533, Stop: 7973, Start Num: 15

Candidate Starts for Amochick_10:

(3, 7266), (12, 7509), (Start: 15 @7533 has 39 MA's), (33, 7629), (55, 7758), (58, 7806), (59, 7809), (62, 7818), (73, 7899), (83, 7965),

Gene: Amymech_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Amymech_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Ayotoya_11 Start: 8058, Stop: 8519, Start Num: 15

Candidate Starts for Ayotoya_11:

(7, 7974), (Start: 15 @8058 has 39 MA's), (20, 8073), (21, 8097), (22, 8100), (32, 8148), (40, 8190), (48, 8235), (49, 8241), (77, 8475), (80, 8490), (82, 8502),

Gene: Azula_7 Start: 5970, Stop: 6446, Start Num: 14

Candidate Starts for Azula_7:

(4, 5763), (7, 5889), (Start: 13 @5967 has 9 MA's), (Start: 14 @5970 has 10 MA's), (24, 6021), (Start: 29 @6045 has 2 MA's), (34, 6066), (37, 6075), (67, 6291), (72, 6324), (75, 6351), (78, 6387),

Gene: BaxterFox_7 Start: 5821, Stop: 6270, Start Num: 13

Candidate Starts for BaxterFox_7:

(Start: 13 @5821 has 9 MA's), (Start: 14 @5824 has 10 MA's), (24, 5875), (34, 5920), (37, 5929), (57, 6058), (81, 6235),

Gene: BetterKatz_11 Start: 8026, Stop: 8487, Start Num: 15

Candidate Starts for BetterKatz_11:

(7, 7942), (Start: 15 @8026 has 39 MA's), (20, 8041), (21, 8065), (22, 8068), (25, 8080), (32, 8116), (40, 8158), (48, 8203), (49, 8209), (77, 8443), (80, 8458), (82, 8470),

Gene: Blino_7 Start: 5970, Stop: 6470, Start Num: 13

Candidate Starts for Blino_7:

(4, 5766), (7, 5892), (Start: 13 @5970 has 9 MA's), (Start: 14 @5973 has 10 MA's), (24, 6024), (Start: 29 @6048 has 2 MA's), (54, 6201), (60, 6264), (67, 6318), (72, 6348), (75, 6375), (78, 6411),

Gene: Blueberry_7 Start: 5967, Stop: 6446, Start Num: 13

Candidate Starts for Blueberry_7:

(4, 5763), (7, 5889), (Start: 13 @5967 has 9 MA's), (Start: 14 @5970 has 10 MA's), (24, 6021), (Start: 29 @6045 has 2 MA's), (34, 6066), (37, 6075), (67, 6291), (72, 6324), (75, 6351), (78, 6387),

Gene: Bock_11 Start: 7776, Stop: 8237, Start Num: 15

Candidate Starts for Bock_11:

(7, 7692), (Start: 15 @7776 has 39 MA's), (20, 7791), (21, 7815), (22, 7818), (25, 7830), (32, 7866), (40, 7908), (48, 7953), (49, 7959), (77, 8193), (80, 8208), (82, 8220),

Gene: Bran_7 Start: 6055, Stop: 6435, Start Num: 30

Candidate Starts for Bran_7:

(Start: 30 @6055 has 7 MA's), (40, 6109), (44, 6133), (48, 6157), (50, 6166), (61, 6259), (74, 6370),

Gene: Brylie_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for Brylie_11:

(7, 7689), (Start: 15 @7773 has 39 MA's), (20, 7788), (21, 7812), (22, 7815), (25, 7827), (32, 7863), (40, 7905), (48, 7950), (49, 7956), (77, 8190), (80, 8205), (82, 8217),

Gene: CarolAnn_7 Start: 5969, Stop: 6469, Start Num: 13

Candidate Starts for CarolAnn_7:

(4, 5765), (7, 5891), (Start: 13 @5969 has 9 MA's), (Start: 14 @5972 has 10 MA's), (24, 6023), (Start: 29 @6047 has 2 MA's), (54, 6200), (60, 6263), (67, 6317), (72, 6347), (75, 6374), (78, 6410),

Gene: Chop_11 Start: 7806, Stop: 8267, Start Num: 15

Candidate Starts for Chop_11:

(7, 7722), (Start: 15 @7806 has 39 MA's), (20, 7821), (21, 7845), (22, 7848), (32, 7896), (40, 7938), (48, 7983), (49, 7989), (77, 8223), (80, 8238), (82, 8250),

Gene: Daegal_11 Start: 7830, Stop: 8270, Start Num: 15

Candidate Starts for Daegal_11:

(3, 7563), (12, 7806), (Start: 15 @7830 has 39 MA's), (33, 7926), (55, 8055), (58, 8103), (59, 8106), (62, 8115), (73, 8196), (83, 8262),

Gene: DeepSoil15_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for DeepSoil15_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: DelRio_11 Start: 8070, Stop: 8531, Start Num: 15

Candidate Starts for DelRio_11:

(7, 7986), (Start: 15 @8070 has 39 MA's), (20, 8085), (21, 8109), (22, 8112), (25, 8124), (32, 8160), (40, 8202), (49, 8253), (77, 8487), (80, 8502),

Gene: Dewey_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Dewey_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Dina_7 Start: 6050, Stop: 6418, Start Num: 30

Candidate Starts for Dina_7:

(Start: 30 @6050 has 7 MA's), (40, 6104), (44, 6128), (48, 6152), (59, 6242), (64, 6248), (74, 6353),

Gene: DumpsterDude_7 Start: 6346, Stop: 6756, Start Num: 15

Candidate Starts for DumpsterDude_7:

(7, 6262), (12, 6322), (Start: 15 @6346 has 39 MA's), (45, 6481), (47, 6496), (48, 6499), (77, 6712),

Gene: Ein37_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Ein37_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Evanesce_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Evanesce_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Forge_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Forge_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Francois_11 Start: 7775, Stop: 8248, Start Num: 15

Candidate Starts for Francois_11:

(7, 7691), (12, 7751), (Start: 15 @7775 has 39 MA's), (20, 7790), (21, 7814), (22, 7817), (25, 7829), (32, 7865), (40, 7907), (49, 7958), (68, 8135), (77, 8204), (82, 8231),

Gene: Frokostdame_7 Start: 6038, Stop: 6565, Start Num: 13

Candidate Starts for Frokostdame_7:

(4, 5834), (7, 5960), (Start: 13 @6038 has 9 MA's), (Start: 14 @6041 has 10 MA's), (24, 6092), (Start: 29 @6116 has 2 MA's), (34, 6137), (67, 6410), (72, 6443), (75, 6470), (78, 6506),

Gene: Gambino_7 Start: 5970, Stop: 6446, Start Num: 14

Candidate Starts for Gambino_7:

(4, 5763), (7, 5889), (Start: 13 @5967 has 9 MA's), (Start: 14 @5970 has 10 MA's), (24, 6021), (Start: 29 @6045 has 2 MA's), (34, 6066), (37, 6075), (67, 6291), (72, 6324), (75, 6351), (78, 6387),

Gene: Gancho_9 Start: 7239, Stop: 7679, Start Num: 15

Candidate Starts for Gancho_9:

(3, 6972), (12, 7215), (Start: 15 @7239 has 39 MA's), (33, 7335), (55, 7464), (58, 7512), (59, 7515), (62, 7524), (73, 7605), (83, 7671),

Gene: Giles_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Giles_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: GrandSlam_11 Start: 7806, Stop: 8267, Start Num: 15

Candidate Starts for GrandSlam_11:

(7, 7722), (Start: 15 @7806 has 39 MA's), (20, 7821), (21, 7845), (22, 7848), (32, 7896), (40, 7938), (48, 7983), (49, 7989), (77, 8223), (80, 8238), (82, 8250),

Gene: Gravaillia_10 Start: 7272, Stop: 7712, Start Num: 15

Candidate Starts for Gravaillia_10:

(3, 7005), (12, 7248), (Start: 15 @7272 has 39 MA's), (33, 7368), (55, 7497), (58, 7545), (59, 7548), (62, 7557), (73, 7638), (83, 7704),

Gene: HH92_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for HH92_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Hadrien_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Hadrien_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Hail_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Hail_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Hamood_11 Start: 7821, Stop: 8267, Start Num: 20

Candidate Starts for Hamood_11:

(7, 7722), (Start: 15 @7806 has 39 MA's), (20, 7821), (21, 7845), (22, 7848), (32, 7896), (40, 7938), (48, 7983), (49, 7989), (77, 8223), (80, 8238), (82, 8250),

Gene: Hortense_7 Start: 5836, Stop: 6276, Start Num: 14

Candidate Starts for Hortense_7:

(1, 5365), (4, 5629), (5, 5653), (7, 5755), (Start: 14 @5836 has 10 MA's), (24, 5896), (34, 5941), (62, 6106), (69, 6157), (81, 6241),

Gene: Howe_7 Start: 5836, Stop: 6276, Start Num: 14

Candidate Starts for Howe_7:

(1, 5365), (4, 5629), (5, 5653), (7, 5755), (Start: 14 @5836 has 10 MA's), (24, 5896), (34, 5941), (62, 6106), (69, 6157), (81, 6241),

Gene: JuJu_7 Start: 5980, Stop: 6495, Start Num: 13

Candidate Starts for JuJu_7:

(4, 5776), (7, 5902), (Start: 13 @5980 has 9 MA's), (Start: 14 @5983 has 10 MA's), (24, 6034), (Start: 29 @6058 has 2 MA's), (34, 6079), (37, 6088), (54, 6205), (67, 6322), (72, 6373), (75, 6400), (78, 6436),

Gene: JustASigh_7 Start: 6534, Stop: 7046, Start Num: 15

Candidate Starts for JustASigh_7:

(12, 6510), (Start: 15 @6534 has 39 MA's), (27, 6612), (35, 6645), (39, 6678), (53, 6774), (73, 6957), (80, 7011),

Gene: Kinbote_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Kinbote_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Lederberg_7 Start: 6050, Stop: 6418, Start Num: 30

Candidate Starts for Lederberg_7:

(Start: 30 @6050 has 7 MA's), (40, 6104), (44, 6128), (48, 6152), (59, 6242), (64, 6248), (74, 6353),

Gene: LilHazelnut_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for LilHazelnut_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Luke_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Luke_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Luna22_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Luna22_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: MagicMan_7 Start: 6338, Stop: 6826, Start Num: 16

Candidate Starts for MagicMan_7:

(6, 6227), (9, 6266), (Start: 16 @6338 has 3 MA's), (31, 6422), (43, 6488), (48, 6527), (76, 6791),

Gene: Malibo_7 Start: 6358, Stop: 6762, Start Num: 15

Candidate Starts for Malibo_7:

(7, 6274), (Start: 15 @6358 has 39 MA's), (26, 6397), (47, 6508), (56, 6556), (77, 6721),

Gene: Mbo4_7 Start: 6382, Stop: 6798, Start Num: 14

Candidate Starts for Mbo4_7:

(12, 6361), (Start: 14 @6382 has 10 MA's), (18, 6388), (19, 6400), (23, 6430), (36, 6481), (41, 6514), (46, 6541),

Gene: MissRona_7 Start: 5970, Stop: 6446, Start Num: 14

Candidate Starts for MissRona_7:

(4, 5763), (7, 5889), (Start: 13 @5967 has 9 MA's), (Start: 14 @5970 has 10 MA's), (24, 6021), (Start: 29 @6045 has 2 MA's), (34, 6066), (37, 6075), (67, 6291), (72, 6324), (75, 6351), (78, 6387),

Gene: Mulch_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for Mulch_11:

(7, 7689), (Start: 15 @7773 has 39 MA's), (20, 7788), (21, 7812), (22, 7815), (25, 7827), (32, 7863), (40, 7905), (48, 7950), (49, 7956), (77, 8190), (80, 8205), (82, 8217),

Gene: Nadeem_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for Nadeem_11:

(7, 7689), (Start: 15 @7773 has 39 MA's), (20, 7788), (21, 7812), (22, 7815), (25, 7827), (32, 7863), (40, 7905), (48, 7950), (49, 7956), (77, 8190), (80, 8205), (82, 8217),

Gene: NancyRae_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for NancyRae_11:

(7, 7689), (Start: 15 @7773 has 39 MA's), (20, 7788), (21, 7812), (22, 7815), (25, 7827), (32, 7863), (40, 7905), (48, 7950), (49, 7956), (77, 8190), (80, 8205), (82, 8217),

Gene: OBUpride_10 Start: 7533, Stop: 7973, Start Num: 15

Candidate Starts for OBUpride_10:

(3, 7266), (12, 7509), (Start: 15 @7533 has 39 MA's), (33, 7629), (55, 7758), (58, 7806), (59, 7809), (62, 7818), (73, 7899), (83, 7965),

Gene: Ohgeesy_7 Start: 5824, Stop: 6270, Start Num: 14

Candidate Starts for Ohgeesy_7:

(Start: 13 @5821 has 9 MA's), (Start: 14 @5824 has 10 MA's), (24, 5875), (34, 5920), (37, 5929), (57, 6058), (81, 6235),

Gene: Opie_7 Start: 6347, Stop: 6841, Start Num: 16

Candidate Starts for Opie_7:

(6, 6236), (9, 6275), (Start: 16 @6347 has 3 MA's), (31, 6431), (48, 6536), (76, 6806),

Gene: PantheRoc_6 Start: 5824, Stop: 6270, Start Num: 14

Candidate Starts for PantheRoc_6:

(1, 5353), (2, 5398), (4, 5617), (7, 5743), (Start: 13 @5821 has 9 MA's), (Start: 14 @5824 has 10 MA's), (24, 5875), (34, 5920), (37, 5929), (57, 6058), (81, 6235),

Gene: Parada_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for Parada_11:

(7, 7689), (Start: 15 @7773 has 39 MA's), (20, 7788), (21, 7812), (22, 7815), (25, 7827), (32, 7863), (40, 7905), (48, 7950), (49, 7956), (77, 8190), (80, 8205), (82, 8217),

Gene: Petra_7 Start: 6045, Stop: 6476, Start Num: 29

Candidate Starts for Petra_7:

(4, 5763), (7, 5889), (Start: 13 @5967 has 9 MA's), (Start: 14 @5970 has 10 MA's), (24, 6021), (Start: 29 @6045 has 2 MA's), (34, 6066), (37, 6075), (54, 6195), (60, 6267), (67, 6321), (72, 6354), (75, 6381), (78, 6417),

Gene: Pimento_10 Start: 7770, Stop: 8225, Start Num: 15

Candidate Starts for Pimento_10:

(7, 7686), (Start: 15 @7770 has 39 MA's), (20, 7785), (21, 7809), (22, 7812), (25, 7824), (32, 7860), (40, 7902), (48, 7947), (49, 7953), (77, 8181), (80, 8196),

Gene: RayTheFireFly_8 Start: 6505, Stop: 6879, Start Num: 29

Candidate Starts for RayTheFireFly_8:

(Start: 13 @6424 has 9 MA's), (17, 6436), (24, 6481), (Start: 29 @6505 has 2 MA's), (71, 6790), (74, 6814),

Gene: Rem711_13 Start: 9248, Stop: 9775, Start Num: 8

Candidate Starts for Rem711_13:

(Start: 8 @9248 has 1 MA's), (10, 9263), (42, 9455), (63, 9608),

Gene: Ruthy_7 Start: 6423, Stop: 6830, Start Num: 15

Candidate Starts for Ruthy_7:

(7, 6339), (12, 6399), (Start: 15 @6423 has 39 MA's), (47, 6573), (48, 6576), (77, 6786),

Gene: SamW_7 Start: 6050, Stop: 6418, Start Num: 30

Candidate Starts for SamW_7:

(Start: 30 @6050 has 7 MA's), (40, 6104), (44, 6128), (48, 6152), (59, 6242), (64, 6248), (74, 6353),

Gene: Schnabeltier_7 Start: 6339, Stop: 6827, Start Num: 16

Candidate Starts for Schnabeltier_7:

(6, 6228), (9, 6267), (Start: 16 @6339 has 3 MA's), (31, 6423), (43, 6489), (48, 6528), (76, 6792),

Gene: Shlim410_7 Start: 5836, Stop: 6276, Start Num: 14

Candidate Starts for Shlim410_7:

(1, 5365), (4, 5629), (5, 5653), (7, 5755), (Start: 14 @5836 has 10 MA's), (24, 5896), (34, 5941), (62, 6106), (69, 6157), (81, 6241),

Gene: Sidious_7 Start: 5827, Stop: 6273, Start Num: 14

Candidate Starts for Sidious_7:

(1, 5356), (2, 5401), (4, 5620), (7, 5746), (Start: 13 @5824 has 9 MA's), (Start: 14 @5827 has 10 MA's), (24, 5878), (28, 5899), (34, 5923), (57, 6061), (65, 6106), (81, 6238),

Gene: StAB_7 Start: 6055, Stop: 6423, Start Num: 30

Candidate Starts for StAB_7:

(Start: 30 @6055 has 7 MA's), (40, 6109), (44, 6133), (48, 6157), (50, 6166), (59, 6247), (64, 6253), (74, 6358),

Gene: TaronosaurusRx_7 Start: 6346, Stop: 6837, Start Num: 16

Candidate Starts for TaronosaurusRx_7:

(6, 6235), (9, 6274), (Start: 16 @6346 has 3 MA's), (31, 6430), (43, 6496), (48, 6535), (73, 6766), (76, 6802),

Gene: Troy_7 Start: 6050, Stop: 6418, Start Num: 30

Candidate Starts for Troy_7:

(Start: 30 @6050 has 7 MA's), (40, 6104), (44, 6128), (48, 6152), (59, 6242), (64, 6248), (74, 6353),

Gene: Twinkle_7 Start: 5836, Stop: 6276, Start Num: 14

Candidate Starts for Twinkle_7:

(1, 5365), (4, 5629), (5, 5653), (7, 5755), (Start: 14 @5836 has 10 MA's), (24, 5896), (34, 5941), (62, 6106), (69, 6157), (81, 6241),

Gene: Ubuntu_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Ubuntu_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Walrus_7 Start: 5970, Stop: 6482, Start Num: 13

Candidate Starts for Walrus_7:

(4, 5766), (7, 5892), (Start: 13 @5970 has 9 MA's), (Start: 14 @5973 has 10 MA's), (24, 6024), (Start: 29 @6048 has 2 MA's), (37, 6078), (54, 6201), (60, 6273), (67, 6327), (72, 6360), (75, 6387), (78, 6423),

Gene: Webster2_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Webster2_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Weirido19_8 Start: 6377, Stop: 6886, Start Num: 15

Candidate Starts for Weirido19_8:

(7, 6293), (12, 6353), (Start: 15 @6377 has 39 MA's), (19, 6404), (33, 6485), (36, 6491), (39, 6521), (47, 6575), (51, 6596), (52, 6611), (60, 6695), (70, 6773),

Gene: Whack_7 Start: 5839, Stop: 6255, Start Num: 13

Candidate Starts for Whack_7:

(4, 5635), (11, 5818), (Start: 13 @5839 has 9 MA's), (Start: 14 @5842 has 10 MA's), (38, 5950), (66, 6127),

Gene: WheatThin_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for WheatThin_11:

(7, 7689), (Start: 15 @7773 has 39 MA's), (20, 7788), (21, 7812), (22, 7815), (25, 7827), (32, 7863), (40, 7905), (48, 7950), (49, 7956), (77, 8190), (80, 8205), (82, 8217),

Gene: Wishmaker_10 Start: 7539, Stop: 7979, Start Num: 15

Candidate Starts for Wishmaker_10:

(3, 7272), (12, 7515), (Start: 15 @7539 has 39 MA's), (33, 7635), (55, 7764), (58, 7812), (59, 7815), (62, 7824), (73, 7905), (83, 7971),

Gene: Yeezy_7 Start: 5821, Stop: 6270, Start Num: 13

Candidate Starts for Yeezy_7:

(1, 5353), (2, 5398), (4, 5617), (7, 5743), (Start: 13 @5821 has 9 MA's), (Start: 14 @5824 has 10 MA's), (34, 5920), (81, 6235), (84, 6250),

Gene: ZAYM_7 Start: 6339, Stop: 6830, Start Num: 16

Candidate Starts for ZAYM_7:

(6, 6228), (9, 6267), (Start: 16 @6339 has 3 MA's), (31, 6423), (43, 6489), (48, 6528), (73, 6759), (76, 6795), (79, 6810),