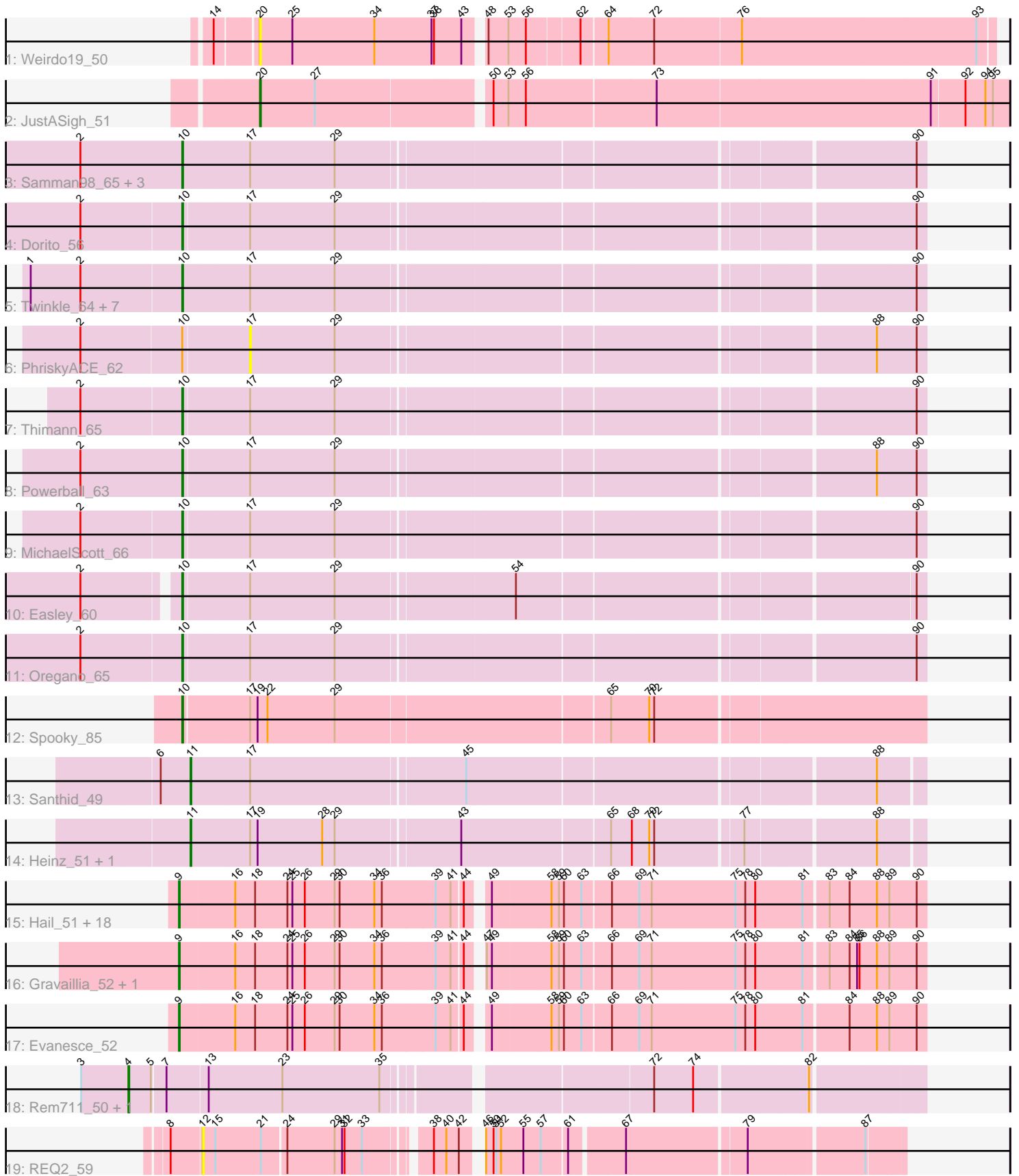


Pham 171528



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 171528 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171528 has 50 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Weirdo19_50
- Track 2 : JustASigh_51
- Track 3 : Samman98_65, DobbysSock_59, Beenie_59, Clark_64
- Track 4 : Dorito_56
- Track 5 : Twinkle_64, Howe_65, Dolores_63, Sekhmet_62, WinkNick_63, Adora_62, Hortense_65, Shlim410_63
- Track 6 : PhriskyACE_62
- Track 7 : Thimann_65
- Track 8 : Powerball_63
- Track 9 : MichaelScott_66
- Track 10 : Easley_60
- Track 11 : Oregano_65
- Track 12 : Spooky_85
- Track 13 : Santhid_49
- Track 14 : Heinz_51, Hibiscus_51
- Track 15 : Hail_51, LilHazelNut_53, Hadrien_53, Wishmaker_51, Ubuntu_53, DeepSoil15_53, Giles_51, Ein37_53, Webster2_53, Amymech_53, Daegal_55, Forge_51, Dewey_51, HH92_52, Amochick_53, Luke_53, Gancho_52, Kinbote_53, Luna22_51
- Track 16 : Gravaillia_52, OBUpride_53
- Track 17 : Evanesce_52
- Track 18 : Rem711_50, 32HC_51
- Track 19 : REQ2_59

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

The start number called the most often in the published annotations is 9, it was called in 22 of the 45 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amochick_53, Amymech_53, Daegal_55, DeepSoil15_53, Dewey_51, Ein37_53, Evanesce_52, Forge_51, Gancho_52, Giles_51, Gravaillia_52, HH92_52, Hadrien_53, Hail_51, Kinbote_53, LilHazelNut_53, Luke_53, Luna22_51, OBUpride_53, Ubuntu_53, Webster2_53, Wishmaker_51,

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

-

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

- 32HC_51, Adora_62, Beenie_59, Clark_64, DobbysSock_59, Dolores_63, Dorito_56, Easley_60, Heinz_51, Hibiscus_51, Hortense_65, Howe_65, JustASigh_51, MichaelScott_66, Oregano_65, PhriskyACE_62, Powerball_63, REQ2_59, Rem711_50, Samman98_65, Santhid_49, Sekhmet_62, Shlim410_63, Spooky_85, Thimann_65, Twinkle_64, Weirido19_50, WinkNick_63,

Summary by start number:

Start 4:

- Found in 2 of 50 (4.0%) of genes in pham
- Manual Annotations of this start: 1 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 32HC_51 (Z), Rem711_50 (Z),

Start 9:

- Found in 22 of 50 (44.0%) of genes in pham
- Manual Annotations of this start: 22 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amochick_53 (Q), Amymech_53 (Q), Daegal_55 (Q), DeepSoil15_53 (Q), Dewey_51 (Q), Ein37_53 (Q), Evanesce_52 (Q), Forge_51 (Q), Gancho_52 (Q), Giles_51 (Q), Gravaillia_52 (Q), HH92_52 (Q), Hadrien_53 (Q), Hail_51 (Q), Kinbote_53 (Q), LilHazelnut_53 (Q), Luke_53 (Q), Luna22_51 (Q), OBUpride_53 (Q), Ubuntu_53 (Q), Webster2_53 (Q), Wishmaker_51 (Q),

Start 10:

- Found in 20 of 50 (40.0%) of genes in pham
- Manual Annotations of this start: 19 of 45
- Called 95.0% of time when present
- Phage (with cluster) where this start called: Adora_62 (CZ4), Beenie_59 (CZ4), Clark_64 (CZ4), DobbysSock_59 (CZ4), Dolores_63 (CZ4), Dorito_56 (CZ4), Easley_60 (CZ4), Hortense_65 (CZ4), Howe_65 (CZ4), MichaelScott_66 (CZ4), Oregano_65 (CZ4), Powerball_63 (CZ4), Samman98_65 (CZ4), Sekhmet_62 (CZ4), Shlim410_63 (CZ4), Spooky_85 (DN2), Thimann_65 (CZ4), Twinkle_64 (CZ4), WinkNick_63 (CZ4),

Start 11:

- Found in 3 of 50 (6.0%) of genes in pham
- Manual Annotations of this start: 2 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Heinz_51 (DY), Hibiscus_51 (DY), Santhid_49 (DY),

Start 12:

- Found in 1 of 50 (2.0%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: REQ2_59 (singleton),

Start 17:

- Found in 23 of 50 (46.0%) of genes in pham
- No Manual Annotations of this start.
- Called 4.3% of time when present
- Phage (with cluster) where this start called: PhriskyACE_62 (CZ4),

Start 20:

- Found in 2 of 50 (4.0%) of genes in pham
- Manual Annotations of this start: 1 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: JustASigh_51 (AH), Weirido19_50 (AH),

Summary by clusters:

There are 7 clusters represented in this pham: singleton, AH, DY, CZ4, Q, DN2, Z,

Info for manual annotations of cluster AH:

- Start number 20 was manually annotated 1 time for cluster AH.

Info for manual annotations of cluster CZ4:

- Start number 10 was manually annotated 18 times for cluster CZ4.

Info for manual annotations of cluster DN2:

- Start number 10 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DY:

- Start number 11 was manually annotated 2 times for cluster DY.

Info for manual annotations of cluster Q:

- Start number 9 was manually annotated 22 times for cluster Q.

Info for manual annotations of cluster Z:

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

Gene Information:

Gene: 32HC_51 Start: 34909, Stop: 35787, Start Num: 4

Candidate Starts for 32HC_51:

(3, 34852), (Start: 4 @34909 has 1 MA's), (5, 34936), (7, 34951), (13, 34999), (23, 35086), (35, 35203), (72, 35488), (74, 35533), (82, 35659),

Gene: Adora_62 Start: 43256, Stop: 44095, Start Num: 10

Candidate Starts for Adora_62:

(1, 43076), (2, 43136), (Start: 10 @43256 has 19 MA's), (17, 43334), (29, 43436), (90, 44084),

Gene: Amochick_53 Start: 37915, Stop: 38778, Start Num: 9

Candidate Starts for Amochick_53:

(Start: 9 @37915 has 22 MA's), (16, 37981), (18, 38005), (24, 38044), (25, 38050), (26, 38065), (29, 38101), (30, 38107), (34, 38149), (36, 38158), (39, 38221), (41, 38239), (44, 38251), (49, 38269), (58, 38338), (59, 38347), (60, 38353), (63, 38374), (66, 38407), (69, 38440), (71, 38455), (75, 38554), (78,

38566), (80, 38578), (81, 38635), (83, 38662), (84, 38686), (88, 38719), (89, 38734), (90, 38767),

Gene: Amymech_53 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Amymech_53:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Beenie_59 Start: 41304, Stop: 42143, Start Num: 10

Candidate Starts for Beenie_59:

(2, 41181), (Start: 10 @41304 has 19 MA's), (17, 41382), (29, 41484), (90, 42132),

Gene: Clark_64 Start: 41067, Stop: 41906, Start Num: 10

Candidate Starts for Clark_64:

(2, 40944), (Start: 10 @41067 has 19 MA's), (17, 41145), (29, 41247), (90, 41895),

Gene: Daegal_55 Start: 38475, Stop: 39338, Start Num: 9

Candidate Starts for Daegal_55:

(Start: 9 @38475 has 22 MA's), (16, 38541), (18, 38565), (24, 38604), (25, 38610), (26, 38625), (29, 38661), (30, 38667), (34, 38709), (36, 38718), (39, 38781), (41, 38799), (44, 38811), (49, 38829), (58, 38898), (59, 38907), (60, 38913), (63, 38934), (66, 38967), (69, 39000), (71, 39015), (75, 39114), (78, 39126), (80, 39138), (81, 39195), (83, 39222), (84, 39246), (88, 39279), (89, 39294), (90, 39327),

Gene: DeepSoil15_53 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for DeepSoil15_53:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Dewey_51 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Dewey_51:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: DobbysSock_59 Start: 40715, Stop: 41554, Start Num: 10

Candidate Starts for DobbysSock_59:

(2, 40592), (Start: 10 @40715 has 19 MA's), (17, 40793), (29, 40895), (90, 41543),

Gene: Dolores_63 Start: 40400, Stop: 41236, Start Num: 10

Candidate Starts for Dolores_63:

(1, 40220), (2, 40280), (Start: 10 @40400 has 19 MA's), (17, 40478), (29, 40580), (90, 41225),

Gene: Dorito_56 Start: 38217, Stop: 39053, Start Num: 10

Candidate Starts for Dorito_56:

(2, 38097), (Start: 10 @38217 has 19 MA's), (17, 38292), (29, 38394), (90, 39042),

Gene: Easley_60 Start: 39896, Stop: 40729, Start Num: 10

Candidate Starts for Easley_60:

(2, 39791), (Start: 10 @39896 has 19 MA's), (17, 39971), (29, 40073), (54, 40277), (90, 40718),

Gene: Ein37_53 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Ein37_53:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Evanesce_52 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Evanesce_52:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Forge_51 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Forge_51:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Gancho_52 Start: 37614, Stop: 38477, Start Num: 9

Candidate Starts for Gancho_52:

(Start: 9 @37614 has 22 MA's), (16, 37680), (18, 37704), (24, 37743), (25, 37749), (26, 37764), (29, 37800), (30, 37806), (34, 37848), (36, 37857), (39, 37920), (41, 37938), (44, 37950), (49, 37968), (58, 38037), (59, 38046), (60, 38052), (63, 38073), (66, 38106), (69, 38139), (71, 38154), (75, 38253), (78, 38265), (80, 38277), (81, 38334), (83, 38361), (84, 38385), (88, 38418), (89, 38433), (90, 38466),

Gene: Giles_51 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Giles_51:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Gravaillia_52 Start: 37905, Stop: 38768, Start Num: 9

Candidate Starts for Gravaillia_52:

(Start: 9 @37905 has 22 MA's), (16, 37971), (18, 37995), (24, 38034), (25, 38040), (26, 38055), (29, 38091), (30, 38097), (34, 38139), (36, 38148), (39, 38211), (41, 38229), (44, 38241), (47, 38253), (49, 38259), (58, 38328), (59, 38337), (60, 38343), (63, 38364), (66, 38397), (69, 38430), (71, 38445), (75, 38544), (78, 38556), (80, 38568), (81, 38625), (83, 38652), (84, 38676), (85, 38685), (86, 38688), (88, 38709), (89, 38724), (90, 38757),

Gene: HH92_52 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for HH92_52:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Hadrien_53 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Hadrien_53:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Hail_51 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Hail_51:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Heinz_51 Start: 32603, Stop: 33430, Start Num: 11

Candidate Starts for Heinz_51:

(Start: 11 @32603 has 2 MA's), (17, 32672), (19, 32681), (28, 32759), (29, 32774), (43, 32915), (65, 33086), (68, 33110), (70, 33131), (72, 33137), (77, 33233), (88, 33380),

Gene: Hibiscus_51 Start: 32552, Stop: 33379, Start Num: 11

Candidate Starts for Hibiscus_51:

(Start: 11 @32552 has 2 MA's), (17, 32621), (19, 32630), (28, 32708), (29, 32723), (43, 32864), (65, 33035), (68, 33059), (70, 33080), (72, 33086), (77, 33182), (88, 33329),

Gene: Hortense_65 Start: 44611, Stop: 45450, Start Num: 10

Candidate Starts for Hortense_65:

(1, 44431), (2, 44491), (Start: 10 @44611 has 19 MA's), (17, 44689), (29, 44791), (90, 45439),

Gene: Howe_65 Start: 44611, Stop: 45450, Start Num: 10

Candidate Starts for Howe_65:

(1, 44431), (2, 44491), (Start: 10 @44611 has 19 MA's), (17, 44689), (29, 44791), (90, 45439),

Gene: JustASigh_51 Start: 35983, Stop: 36849, Start Num: 20

Candidate Starts for JustASigh_51:

(Start: 20 @35983 has 1 MA's), (27, 36049), (50, 36244), (53, 36262), (56, 36283), (73, 36436), (91, 36757), (92, 36796), (94, 36820), (95, 36829),

Gene: Kinbote_53 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Kinbote_53:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: LilHazelnut_53 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for LilHazelnut_53:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Luke_53 Start: 37846, Stop: 38709, Start Num: 9

Candidate Starts for Luke_53:

(Start: 9 @37846 has 22 MA's), (16, 37912), (18, 37936), (24, 37975), (25, 37981), (26, 37996), (29, 38032), (30, 38038), (34, 38080), (36, 38089), (39, 38152), (41, 38170), (44, 38182), (49, 38200), (58,

38269), (59, 38278), (60, 38284), (63, 38305), (66, 38338), (69, 38371), (71, 38386), (75, 38485), (78, 38497), (80, 38509), (81, 38566), (83, 38593), (84, 38617), (88, 38650), (89, 38665), (90, 38698),

Gene: Luna22_51 Start: 37875, Stop: 38738, Start Num: 9

Candidate Starts for Luna22_51:

(Start: 9 @37875 has 22 MA's), (16, 37941), (18, 37965), (24, 38004), (25, 38010), (26, 38025), (29, 38061), (30, 38067), (34, 38109), (36, 38118), (39, 38181), (41, 38199), (44, 38211), (49, 38229), (58, 38298), (59, 38307), (60, 38313), (63, 38334), (66, 38367), (69, 38400), (71, 38415), (75, 38514), (78, 38526), (80, 38538), (81, 38595), (83, 38622), (84, 38646), (88, 38679), (89, 38694), (90, 38727),

Gene: MichaelScott_66 Start: 42331, Stop: 43167, Start Num: 10

Candidate Starts for MichaelScott_66:

(2, 42211), (Start: 10 @42331 has 19 MA's), (17, 42406), (29, 42508), (90, 43156),

Gene: OBUpride_53 Start: 37905, Stop: 38768, Start Num: 9

Candidate Starts for OBUpride_53:

(Start: 9 @37905 has 22 MA's), (16, 37971), (18, 37995), (24, 38034), (25, 38040), (26, 38055), (29, 38091), (30, 38097), (34, 38139), (36, 38148), (39, 38211), (41, 38229), (44, 38241), (47, 38253), (49, 38259), (58, 38328), (59, 38337), (60, 38343), (63, 38364), (66, 38397), (69, 38430), (71, 38445), (75, 38544), (78, 38556), (80, 38568), (81, 38625), (83, 38652), (84, 38676), (85, 38685), (86, 38688), (88, 38709), (89, 38724), (90, 38757),

Gene: Oregano_65 Start: 41205, Stop: 42041, Start Num: 10

Candidate Starts for Oregano_65:

(2, 41085), (Start: 10 @41205 has 19 MA's), (17, 41280), (29, 41382), (90, 42030),

Gene: PhriskyACE_62 Start: 41297, Stop: 42058, Start Num: 17

Candidate Starts for PhriskyACE_62:

(2, 41102), (Start: 10 @41222 has 19 MA's), (17, 41297), (29, 41399), (88, 42002), (90, 42047),

Gene: Powerball_63 Start: 41331, Stop: 42167, Start Num: 10

Candidate Starts for Powerball_63:

(2, 41208), (Start: 10 @41331 has 19 MA's), (17, 41406), (29, 41508), (88, 42111), (90, 42156),

Gene: REQ2_59 Start: 39789, Stop: 40529, Start Num: 12

Candidate Starts for REQ2_59:

(8, 39753), (12, 39789), (15, 39804), (21, 39855), (24, 39882), (29, 39939), (31, 39948), (32, 39951), (33, 39972), (38, 40032), (40, 40047), (42, 40062), (46, 40077), (50, 40086), (51, 40089), (52, 40095), (55, 40122), (57, 40143), (61, 40170), (67, 40230), (79, 40362), (87, 40488),

Gene: Rem711_50 Start: 34893, Stop: 35771, Start Num: 4

Candidate Starts for Rem711_50:

(3, 34836), (Start: 4 @34893 has 1 MA's), (5, 34920), (7, 34935), (13, 34983), (23, 35070), (35, 35187), (72, 35472), (74, 35517), (82, 35643),

Gene: Samman98_65 Start: 41170, Stop: 42009, Start Num: 10

Candidate Starts for Samman98_65:

(2, 41047), (Start: 10 @41170 has 19 MA's), (17, 41248), (29, 41350), (90, 41998),

Gene: Santhid_49 Start: 31927, Stop: 32751, Start Num: 11

Candidate Starts for Santhid_49:

(6, 31891), (Start: 11 @31927 has 2 MA's), (17, 31996), (45, 32245), (88, 32701),

Gene: Sekhmet_62 Start: 40799, Stop: 41635, Start Num: 10

Candidate Starts for Sekhmet_62:

(1, 40619), (2, 40679), (Start: 10 @40799 has 19 MA's), (17, 40877), (29, 40979), (90, 41624),

Gene: Shlim410_63 Start: 44611, Stop: 45450, Start Num: 10

Candidate Starts for Shlim410_63:

(1, 44431), (2, 44491), (Start: 10 @44611 has 19 MA's), (17, 44689), (29, 44791), (90, 45439),

Gene: Spooky_85 Start: 47535, Stop: 48386, Start Num: 10

Candidate Starts for Spooky_85:

(Start: 10 @47535 has 19 MA's), (17, 47610), (19, 47619), (22, 47631), (29, 47712), (65, 48030), (70, 48075), (72, 48081),

Gene: Thimann_65 Start: 41439, Stop: 42275, Start Num: 10

Candidate Starts for Thimann_65:

(2, 41319), (Start: 10 @41439 has 19 MA's), (17, 41514), (29, 41616), (90, 42264),

Gene: Twinkle_64 Start: 45670, Stop: 46509, Start Num: 10

Candidate Starts for Twinkle_64:

(1, 45490), (2, 45550), (Start: 10 @45670 has 19 MA's), (17, 45748), (29, 45850), (90, 46498),

Gene: Ubuntu_53 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Ubuntu_53:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Webster2_53 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Webster2_53:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),

Gene: Weirdo19_50 Start: 36157, Stop: 37002, Start Num: 20

Candidate Starts for Weirdo19_50:

(14, 36112), (Start: 20 @36157 has 1 MA's), (25, 36196), (34, 36295), (37, 36364), (38, 36367), (43, 36400), (48, 36418), (53, 36442), (56, 36463), (62, 36523), (64, 36553), (72, 36607), (76, 36706), (93, 36985),

Gene: WinkNick_63 Start: 40323, Stop: 41159, Start Num: 10

Candidate Starts for WinkNick_63:

(1, 40143), (2, 40203), (Start: 10 @40323 has 19 MA's), (17, 40401), (29, 40503), (90, 41148),

Gene: Wishmaker_51 Start: 37891, Stop: 38754, Start Num: 9

Candidate Starts for Wishmaker_51:

(Start: 9 @37891 has 22 MA's), (16, 37957), (18, 37981), (24, 38020), (25, 38026), (26, 38041), (29, 38077), (30, 38083), (34, 38125), (36, 38134), (39, 38197), (41, 38215), (44, 38227), (49, 38245), (58, 38314), (59, 38323), (60, 38329), (63, 38350), (66, 38383), (69, 38416), (71, 38431), (75, 38530), (78, 38542), (80, 38554), (81, 38611), (83, 38638), (84, 38662), (88, 38695), (89, 38710), (90, 38743),