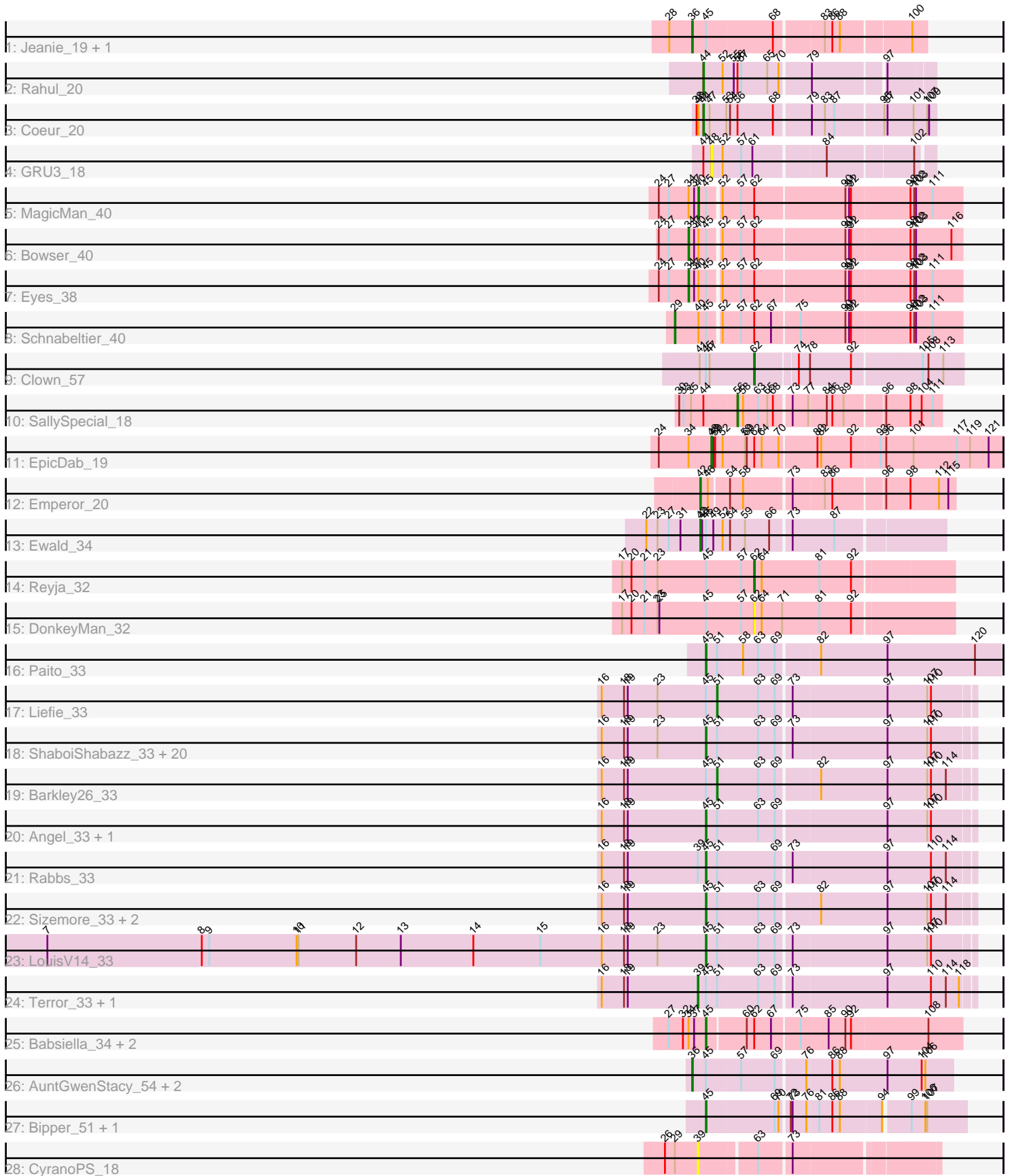


Zoomed Pham 196567



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 196567 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196567 has 58 members, 4 are drafts.

Phages represented in each track:

- Track 1 : Jeanie_19, McGonagall_19
- Track 2 : Rahul_20
- Track 3 : Coeur_20
- Track 4 : GRU3_18
- Track 5 : MagicMan_40
- Track 6 : Bowser_40
- Track 7 : Eyes_38
- Track 8 : Schnabeltier_40
- Track 9 : Clown_57
- Track 10 : SallySpecial_18
- Track 11 : EpicDab_19
- Track 12 : Emperor_20
- Track 13 : Ewald_34
- Track 14 : Reyja_32
- Track 15 : DonkeyMan_32
- Track 16 : Paito_33
- Track 17 : Liefie_33
- Track 18 : ShaboiShabazz_33, Periodt_33, TomBrady_33, Avrafan_33, BruceB_33, Mowgli_33, BPs_33, Marmie_33, Chance64_33, Jonghyun_33, Sweets_33, Hotshotbaby7_33, Olga_33, JorRay_33, Halo_33, Cherrybomb426_33, Jane_33, Annihilator_33, Phreak_33, Aroostook_33, Hope_33
- Track 19 : Barkley26_33
- Track 20 : Angel_33, Plagueis_33
- Track 21 : Rabbs_33
- Track 22 : Sizemore_33, Kasen3_33, Grizzly_33
- Track 23 : LouisV14_33
- Track 24 : Terror_33, Taheera_33
- Track 25 : Babsiella_34, Brujita_34, Island3_34
- Track 26 : AuntGwenStacy_54, Typha_53, Hilltopfarm_53
- Track 27 : Bipper_51, Cracklewink_51
- Track 28 : CyranoPS_18

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

The start number called the most often in the published annotations is 45, it was called in 34 of the 54 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Angel_33, Annihilator_33, Aroostook_33, Avrafan_33, BPs_33, Babsiella_34, Bipper_51, BruceB_33, Brujita_34, Chance64_33, Cherrybomb426_33, Cracklewink_51, Grizzly_33, Halo_33, Hope_33, Hotshotbaby7_33, Island3_34, Jane_33, Jonghyun_33, JorRay_33, Kasen3_33, LouisV14_33, Marmie_33, Mowgli_33, Olga_33, Paito_33, Periodt_33, Phreak_33, Plagueis_33, Rabbs_33, ShaboiShabazz_33, Sizemore_33, Sweets_33, TomBrady_33,

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

- AuntGwenStacy_54, Barkley26_33, Bowser_40, Clown_57, DonkeyMan_32, Ewald_34, Eyes_38, Hilltopfarm_53, Jeanie_19, Liefie_33, MagicMan_40, McGonagall_19, Reyja_32, Schnabeltier_40, Taheera_33, Terror_33, Typha_53,

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

- Coeur_20, CyranoPS_18, Emperor_20, EpicDab_19, GRU3_18, Rahul_20, SallySpecial_18,

Summary by start number:

Start 29:

- Found in 2 of 58 (3.4%) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Schnabeltier_40 (DB),

Start 34:

- Found in 7 of 58 (12.1%) of genes in pham
- Manual Annotations of this start: 2 of 54
- Called 28.6% of time when present
- Phage (with cluster) where this start called: Bowser_40 (DB), Eyes_38 (DB),

Start 36:

- Found in 5 of 58 (8.6%) of genes in pham
- Manual Annotations of this start: 4 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AuntGwenStacy_54 (Y), Hilltopfarm_53 (Y), Jeanie_19 (CW1), McGonagall_19 (CW1), Typha_53 (Y),

Start 39:

- Found in 4 of 58 (6.9%) of genes in pham
- Manual Annotations of this start: 2 of 54
- Called 75.0% of time when present
- Phage (with cluster) where this start called: CyranoPS_18 (singleton), Taheera_33 (G1), Terror_33 (G1),

Start 40:

- Found in 5 of 58 (8.6%) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 20.0% of time when present
- Phage (with cluster) where this start called: MagicMan_40 (DB),

Start 42:

- Found in 2 of 58 (3.4%) of genes in pham
- Manual Annotations of this start: 2 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Emperor_20 (DM), Ewald_34 (DT),

Start 44:

- Found in 4 of 58 (6.9%) of genes in pham
- Manual Annotations of this start: 2 of 54
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Coeur_20 (CW2), Rahul_20 (CW2),

Start 45:

- Found in 51 of 58 (87.9%) of genes in pham
- Manual Annotations of this start: 34 of 54
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Angel_33 (G1), Annihilator_33 (G1), Aroostook_33 (G1), Avrafan_33 (G1), BPs_33 (G1), Babsiella_34 (I1), Bipper_51 (Y), BruceB_33 (G1), Brujita_34 (I1), Chance64_33 (G1), Cherrybomb426_33 (G1), Cracklewink_51 (Y), Grizzly_33 (G1), Halo_33 (G1), Hope_33 (G1), Hotshotbaby7_33 (G1), Island3_34 (I1), Jane_33 (G1), Jonghyun_33 (G1), JorRay_33 (G1), Kasen3_33 (G1), LouisV14_33 (G1), Marmie_33 (G1), Mowgli_33 (G1), Olga_33 (G1), Paito_33 (G1), Periodt_33 (G1), Phreak_33 (G1), Plagueis_33 (G1), Rabbs_33 (G1), ShaboiShabazz_33 (G1), Sizemore_33 (G1), Sweets_33 (G1), TomBrady_33 (G1),

Start 48:

- Found in 2 of 58 (3.4%) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EpicDab_19 (DM), GRU3_18 (CW2),

Start 51:

- Found in 33 of 58 (56.9%) of genes in pham
- Manual Annotations of this start: 2 of 54
- Called 6.1% of time when present
- Phage (with cluster) where this start called: Barkley26_33 (G1), Liefie_33 (G1),

Start 56:

- Found in 3 of 58 (5.2%) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 33.3% of time when present
- Phage (with cluster) where this start called: SallySpecial_18 (DM),

Start 62:

- Found in 11 of 58 (19.0%) of genes in pham
- Manual Annotations of this start: 2 of 54
- Called 27.3% of time when present
- Phage (with cluster) where this start called: Clown_57 (DC2), DonkeyMan_32 (DY), Reyja_32 (DY),

Summary by clusters:

There are 11 clusters represented in this pham: singleton, DM, G1, CW1, CW2, DB, I1, DY, Y, DT, DC2,

Info for manual annotations of cluster CW1:

- Start number 36 was manually annotated 2 times for cluster CW1.

Info for manual annotations of cluster CW2:

- Start number 44 was manually annotated 2 times for cluster CW2.

Info for manual annotations of cluster DB:

- Start number 29 was manually annotated 1 time for cluster DB.
- Start number 34 was manually annotated 2 times for cluster DB.
- Start number 40 was manually annotated 1 time for cluster DB.

Info for manual annotations of cluster DC2:

- Start number 62 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DM:

- Start number 42 was manually annotated 1 time for cluster DM.
- Start number 48 was manually annotated 1 time for cluster DM.
- Start number 56 was manually annotated 1 time for cluster DM.

Info for manual annotations of cluster DT:

- Start number 42 was manually annotated 1 time for cluster DT.

Info for manual annotations of cluster DY:

- Start number 62 was manually annotated 1 time for cluster DY.

Info for manual annotations of cluster G1:

- Start number 39 was manually annotated 2 times for cluster G1.
- Start number 45 was manually annotated 29 times for cluster G1.
- Start number 51 was manually annotated 2 times for cluster G1.

Info for manual annotations of cluster I1:

- Start number 45 was manually annotated 3 times for cluster I1.

Info for manual annotations of cluster Y:

- Start number 36 was manually annotated 2 times for cluster Y.
- Start number 45 was manually annotated 2 times for cluster Y.

Gene Information:

Gene: Angel_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Angel_33:

(16, 29489), (18, 29453), (19, 29447), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (97, 29048), (107, 28985), (110, 28979),

Gene: Annihilator_33 Start: 29315, Stop: 28905, Start Num: 45

Candidate Starts for Annihilator_33:

(16, 29480), (18, 29444), (19, 29438), (23, 29390), (Start: 45 @29315 has 34 MA's), (Start: 51 @29297 has 2 MA's), (63, 29234), (69, 29207), (73, 29186), (97, 29039), (107, 28976), (110, 28970),

Gene: Aroostook_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Aroostook_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: AuntGwenStacy_54 Start: 41198, Stop: 40797, Start Num: 36

Candidate Starts for AuntGwenStacy_54:

(Start: 36 @41198 has 4 MA's), (Start: 45 @41177 has 34 MA's), (57, 41123), (69, 41069), (76, 41027), (86, 40988), (88, 40976), (97, 40901), (104, 40847), (106, 40841),

Gene: Avrafan_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Avrafan_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: BPs_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for BPs_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Babsiella_34 Start: 28570, Stop: 28175, Start Num: 45

Candidate Starts for Babsiella_34:

(27, 28627), (32, 28606), (Start: 34 @28597 has 2 MA's), (37, 28588), (Start: 45 @28570 has 34 MA's), (60, 28510), (Start: 62 @28498 has 2 MA's), (67, 28471), (75, 28429), (85, 28384), (90, 28357), (92, 28348), (108, 28228),

Gene: Barkley26_33 Start: 29328, Stop: 28936, Start Num: 51

Candidate Starts for Barkley26_33:

(16, 29511), (18, 29475), (19, 29469), (Start: 45 @29346 has 34 MA's), (Start: 51 @29328 has 2 MA's), (63, 29265), (69, 29238), (82, 29175), (97, 29070), (107, 29007), (110, 29001), (114, 28977),

Gene: Bipper_51 Start: 39965, Stop: 39576, Start Num: 45

Candidate Starts for Bipper_51:

(Start: 45 @39965 has 34 MA's), (69, 39857), (70, 39851), (72, 39839), (73, 39836), (76, 39815), (81, 39797), (86, 39776), (88, 39764), (94, 39701), (99, 39662), (106, 39641), (107, 39638),

Gene: Bowser_40 Start: 32553, Stop: 32140, Start Num: 34

Candidate Starts for Bowser_40:

(24, 32598), (27, 32583), (Start: 34 @32553 has 2 MA's), (37, 32544), (Start: 40 @32538 has 1 MA's), (Start: 45 @32526 has 34 MA's), (52, 32508), (57, 32478), (Start: 62 @32457 has 2 MA's), (90, 32316), (91, 32310), (92, 32307), (98, 32220), (102, 32214), (103, 32211), (116, 32154),

Gene: BruceB_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for BruceB_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Brujita_34 Start: 29468, Stop: 29082, Start Num: 45

Candidate Starts for Brujita_34:

(27, 29525), (32, 29504), (Start: 34 @29495 has 2 MA's), (37, 29486), (Start: 45 @29468 has 34 MA's), (60, 29408), (Start: 62 @29396 has 2 MA's), (67, 29369), (75, 29327), (85, 29282), (90, 29255), (92, 29246), (108, 29126),

Gene: Chance64_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Chance64_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Cherrybomb426_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Cherrybomb426_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Clown_57 Start: 43040, Stop: 42723, Start Num: 62

Candidate Starts for Clown_57:

(41, 43127), (Start: 45 @43118 has 34 MA's), (47, 43112), (Start: 62 @43040 has 2 MA's), (74, 42977), (78, 42959), (92, 42893), (105, 42788), (108, 42779), (113, 42755),

Gene: Coeur_20 Start: 14347, Stop: 13994, Start Num: 44

Candidate Starts for Coeur_20:

(38, 14356), (Start: 40 @14353 has 1 MA's), (Start: 44 @14347 has 2 MA's), (47, 14338), (53, 14311), (54, 14305), (Start: 56 @14293 has 1 MA's), (68, 14236), (79, 14185), (83, 14164), (87, 14149), (95, 14074), (97, 14071), (101, 14029), (107, 14008), (109, 14005),

Gene: Cracklewink_51 Start: 39958, Stop: 39569, Start Num: 45

Candidate Starts for Cracklewink_51:

(Start: 45 @39958 has 34 MA's), (69, 39850), (70, 39844), (72, 39832), (73, 39829), (76, 39808), (81, 39790), (86, 39769), (88, 39757), (94, 39694), (99, 39655), (106, 39634), (107, 39631),

Gene: CyranoPS_18 Start: 12709, Stop: 12362, Start Num: 39

Candidate Starts for CyranoPS_18:

(26, 12760), (Start: 29 @12745 has 1 MA's), (Start: 39 @12709 has 2 MA's), (63, 12625), (73, 12577),

Gene: DonkeyMan_32 Start: 27496, Stop: 27185, Start Num: 62

Candidate Starts for DonkeyMan_32:

(17, 27706), (20, 27691), (21, 27670), (23, 27649), (25, 27646), (Start: 45 @27574 has 34 MA's), (57, 27517), (Start: 62 @27496 has 2 MA's), (64, 27484), (71, 27451), (81, 27391), (92, 27340),

Gene: Emperor_20 Start: 14847, Stop: 14473, Start Num: 42

Candidate Starts for Emperor_20:

(Start: 42 @14847 has 2 MA's), (46, 14838), (54, 14811), (58, 14790), (73, 14718), (83, 14670), (86, 14658), (96, 14583), (98, 14544), (112, 14499), (115, 14484),

Gene: EpicDab_19 Start: 14735, Stop: 14277, Start Num: 48

Candidate Starts for EpicDab_19:

(24, 14819), (Start: 34 @14771 has 2 MA's), (Start: 48 @14735 has 1 MA's), (49, 14732), (50, 14729), (52, 14717), (59, 14681), (60, 14678), (Start: 62 @14666 has 2 MA's), (64, 14654), (70, 14627), (80, 14570), (82, 14564), (92, 14516), (93, 14471), (96, 14462), (101, 14420), (117, 14351), (119, 14330), (121, 14300),

Gene: Ewald_34 Start: 29912, Stop: 29541, Start Num: 42

Candidate Starts for Ewald_34:

(22, 29993), (23, 29975), (27, 29957), (31, 29939), (Start: 42 @29912 has 2 MA's), (43, 29909), (Start: 45 @29903 has 34 MA's), (49, 29891), (52, 29876), (54, 29867), (59, 29843), (66, 29804), (73, 29774), (87, 29708),

Gene: Eyes_38 Start: 32329, Stop: 31913, Start Num: 34

Candidate Starts for Eyes_38:

(24, 32374), (27, 32359), (Start: 34 @32329 has 2 MA's), (37, 32320), (Start: 40 @32314 has 1 MA's), (Start: 45 @32302 has 34 MA's), (52, 32284), (57, 32254), (Start: 62 @32233 has 2 MA's), (90, 32092), (91, 32086), (92, 32083), (98, 31996), (102, 31990), (103, 31987), (111, 31960),

Gene: GRU3_18 Start: 14485, Stop: 14162, Start Num: 48

Candidate Starts for GRU3_18:

(Start: 44 @14497 has 2 MA's), (Start: 48 @14485 has 1 MA's), (52, 14467), (57, 14440), (61, 14422), (84, 14314), (102, 14188),

Gene: Grizzly_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Grizzly_33:

(16, 29489), (18, 29453), (19, 29447), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (82, 29153), (97, 29048), (107, 28985), (110, 28979), (114, 28955),

Gene: Halo_33 Start: 29319, Stop: 28909, Start Num: 45

Candidate Starts for Halo_33:

(16, 29484), (18, 29448), (19, 29442), (23, 29394), (Start: 45 @29319 has 34 MA's), (Start: 51 @29301 has 2 MA's), (63, 29238), (69, 29211), (73, 29190), (97, 29043), (107, 28980), (110, 28974),

Gene: Hilltopfarm_53 Start: 40885, Stop: 40484, Start Num: 36

Candidate Starts for Hilltopfarm_53:

(Start: 36 @40885 has 4 MA's), (Start: 45 @40864 has 34 MA's), (57, 40810), (69, 40756), (76, 40714), (86, 40675), (88, 40663), (97, 40588), (104, 40534), (106, 40528),

Gene: Hope_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Hope_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Hotshotbaby7_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Hotshotbaby7_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Island3_34 Start: 29468, Stop: 29082, Start Num: 45

Candidate Starts for Island3_34:

(27, 29525), (32, 29504), (Start: 34 @29495 has 2 MA's), (37, 29486), (Start: 45 @29468 has 34 MA's), (60, 29408), (Start: 62 @29396 has 2 MA's), (67, 29369), (75, 29327), (85, 29282), (90, 29255), (92, 29246), (108, 29126),

Gene: Jane_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Jane_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Jeanie_19 Start: 13938, Stop: 13588, Start Num: 36

Candidate Starts for Jeanie_19:

(28, 13974), (Start: 36 @13938 has 4 MA's), (Start: 45 @13917 has 34 MA's), (68, 13812), (83, 13740), (86, 13728), (88, 13716), (100, 13611),

Gene: Jonghyun_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Jonghyun_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: JorRay_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for JorRay_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Kasen3_33 Start: 29325, Stop: 28915, Start Num: 45

Candidate Starts for Kasen3_33:

(16, 29490), (18, 29454), (19, 29448), (Start: 45 @29325 has 34 MA's), (Start: 51 @29307 has 2 MA's), (63, 29244), (69, 29217), (82, 29154), (97, 29049), (107, 28986), (110, 28980), (114, 28956),

Gene: Liefie_33 Start: 29304, Stop: 28912, Start Num: 51

Candidate Starts for Liefie_33:

(16, 29487), (18, 29451), (19, 29445), (23, 29397), (Start: 45 @29322 has 34 MA's), (Start: 51 @29304 has 2 MA's), (63, 29241), (69, 29214), (73, 29193), (97, 29046), (107, 28983), (110, 28977),

Gene: LouisV14_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for LouisV14_33:

(1, 30914), (2, 30821), (3, 30602), (4, 30569), (5, 30500), (6, 30452), (7, 30383), (8, 30134), (9, 30122), (10, 29981), (11, 29978), (12, 29885), (13, 29813), (14, 29696), (15, 29588), (16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: MagicMan_40 Start: 32861, Stop: 32460, Start Num: 40

Candidate Starts for MagicMan_40:

(24, 32921), (27, 32906), (Start: 34 @32876 has 2 MA's), (37, 32867), (Start: 40 @32861 has 1 MA's), (Start: 45 @32849 has 34 MA's), (52, 32831), (57, 32801), (Start: 62 @32780 has 2 MA's), (90, 32639), (91, 32633), (92, 32630), (98, 32543), (102, 32537), (103, 32534), (111, 32507),

Gene: Marmie_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Marmie_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: McGonagall_19 Start: 13938, Stop: 13588, Start Num: 36

Candidate Starts for McGonagall_19:

(28, 13974), (Start: 36 @13938 has 4 MA's), (Start: 45 @13917 has 34 MA's), (68, 13812), (83, 13740), (86, 13728), (88, 13716), (100, 13611),

Gene: Mowgli_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Mowgli_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Olga_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Olga_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Paito_33 Start: 29505, Stop: 29047, Start Num: 45

Candidate Starts for Paito_33:

(Start: 45 @29505 has 34 MA's), (Start: 51 @29487 has 2 MA's), (58, 29448), (63, 29424), (69, 29397), (82, 29334), (97, 29229), (120, 29088),

Gene: Periodt_33 Start: 29315, Stop: 28905, Start Num: 45

Candidate Starts for Periodt_33:

(16, 29480), (18, 29444), (19, 29438), (23, 29390), (Start: 45 @29315 has 34 MA's), (Start: 51 @29297 has 2 MA's), (63, 29234), (69, 29207), (73, 29186), (97, 29039), (107, 28976), (110, 28970),

Gene: Phreak_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for Phreak_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Plagueis_33 Start: 29159, Stop: 28749, Start Num: 45

Candidate Starts for Plagueis_33:

(16, 29324), (18, 29288), (19, 29282), (Start: 45 @29159 has 34 MA's), (Start: 51 @29141 has 2 MA's), (63, 29078), (69, 29051), (97, 28883), (107, 28820), (110, 28814),

Gene: Rabbs_33 Start: 29407, Stop: 28997, Start Num: 45

Candidate Starts for Rabbs_33:

(16, 29572), (18, 29536), (19, 29530), (Start: 39 @29419 has 2 MA's), (Start: 45 @29407 has 34 MA's), (Start: 51 @29389 has 2 MA's), (69, 29299), (73, 29278), (97, 29131), (110, 29062), (114, 29038),

Gene: Rahul_20 Start: 14354, Stop: 14019, Start Num: 44

Candidate Starts for Rahul_20:

(Start: 44 @14354 has 2 MA's), (52, 14327), (55, 14309), (Start: 56 @14303 has 1 MA's), (57, 14297), (65, 14255), (70, 14237), (79, 14195), (97, 14090),

Gene: Reyja_32 Start: 26445, Stop: 26137, Start Num: 62

Candidate Starts for Reyja_32:

(17, 26655), (20, 26640), (21, 26619), (23, 26598), (Start: 45 @26523 has 34 MA's), (57, 26466), (Start: 62 @26445 has 2 MA's), (64, 26433), (81, 26340), (92, 26289),

Gene: SallySpecial_18 Start: 14300, Stop: 13995, Start Num: 56

Candidate Starts for SallySpecial_18:

(30, 14387), (33, 14381), (35, 14369), (Start: 44 @14351 has 2 MA's), (Start: 56 @14300 has 1 MA's), (58, 14291), (63, 14267), (65, 14252), (68, 14243), (73, 14219), (77, 14195), (84, 14168), (86, 14159), (89, 14141), (96, 14084), (98, 14045), (104, 14027), (111, 14009),

Gene: Schnabeltier_40 Start: 32529, Stop: 32092, Start Num: 29

Candidate Starts for Schnabeltier_40:

(Start: 29 @32529 has 1 MA's), (Start: 40 @32493 has 1 MA's), (Start: 45 @32481 has 34 MA's), (52, 32463), (57, 32433), (Start: 62 @32412 has 2 MA's), (67, 32385), (75, 32343), (90, 32271), (91, 32265), (92, 32262), (98, 32175), (102, 32169), (103, 32166), (111, 32139),

Gene: ShaboiShabazz_33 Start: 29324, Stop: 28914, Start Num: 45

Candidate Starts for ShaboiShabazz_33:

(16, 29489), (18, 29453), (19, 29447), (23, 29399), (Start: 45 @29324 has 34 MA's), (Start: 51 @29306 has 2 MA's), (63, 29243), (69, 29216), (73, 29195), (97, 29048), (107, 28985), (110, 28979),

Gene: Sizemore_33 Start: 29325, Stop: 28915, Start Num: 45

Candidate Starts for Sizemore_33:

(16, 29490), (18, 29454), (19, 29448), (Start: 45 @29325 has 34 MA's), (Start: 51 @29307 has 2 MA's), (63, 29244), (69, 29217), (82, 29154), (97, 29049), (107, 28986), (110, 28980), (114, 28956),

Gene: Sweets_33 Start: 29319, Stop: 28909, Start Num: 45

Candidate Starts for Sweets_33:

(16, 29484), (18, 29448), (19, 29442), (23, 29394), (Start: 45 @29319 has 34 MA's), (Start: 51 @29301 has 2 MA's), (63, 29238), (69, 29211), (73, 29190), (97, 29043), (107, 28980), (110, 28974),

Gene: Taheera_33 Start: 29454, Stop: 29032, Start Num: 39

Candidate Starts for Taheera_33:

(16, 29607), (18, 29571), (19, 29565), (Start: 39 @29454 has 2 MA's), (Start: 45 @29442 has 34 MA's), (Start: 51 @29424 has 2 MA's), (63, 29361), (69, 29334), (73, 29313), (97, 29166), (110, 29097), (114, 29073), (118, 29052),

Gene: Terror_33 Start: 29454, Stop: 29032, Start Num: 39

Candidate Starts for Terror_33:

(16, 29607), (18, 29571), (19, 29565), (Start: 39 @29454 has 2 MA's), (Start: 45 @29442 has 34 MA's), (Start: 51 @29424 has 2 MA's), (63, 29361), (69, 29334), (73, 29313), (97, 29166), (110, 29097), (114, 29073), (118, 29052),

Gene: TomBrady_33 Start: 29325, Stop: 28915, Start Num: 45

Candidate Starts for TomBrady_33:

(16, 29490), (18, 29454), (19, 29448), (23, 29400), (Start: 45 @29325 has 34 MA's), (Start: 51 @29307 has 2 MA's), (63, 29244), (69, 29217), (73, 29196), (97, 29049), (107, 28986), (110, 28980),

Gene: Typha_53 Start: 41198, Stop: 40797, Start Num: 36

Candidate Starts for Typha_53:

(Start: 36 @41198 has 4 MA's), (Start: 45 @41177 has 34 MA's), (57, 41123), (69, 41069), (76, 41027), (86, 40988), (88, 40976), (97, 40901), (104, 40847), (106, 40841),