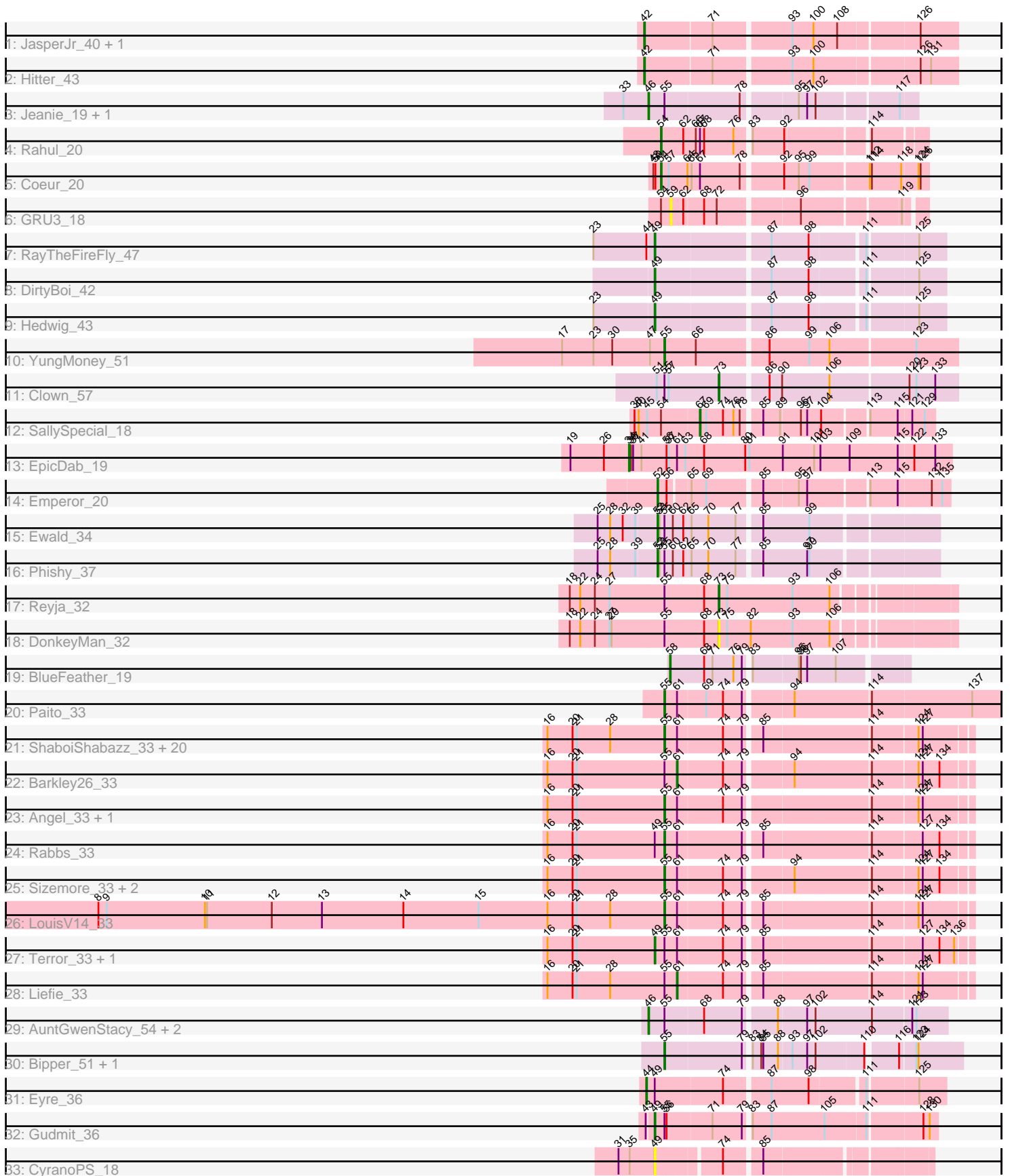


Zoomed Pham 224583



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 224583 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224583 has 62 members, 4 are drafts.

Phages represented in each track:

- Track 1 : JasperJr_40, Guacamole_40
- Track 2 : Hitter_43
- Track 3 : Jeanie_19, McGonagall_19
- Track 4 : Rahul_20
- Track 5 : Coeur_20
- Track 6 : GRU3_18
- Track 7 : RayTheFireFly_47
- Track 8 : DirtyBoi_42
- Track 9 : Hedwig_43
- Track 10 : YungMoney_51
- Track 11 : Clown_57
- Track 12 : SallySpecial_18
- Track 13 : EpicDab_19
- Track 14 : Emperor_20
- Track 15 : Ewald_34
- Track 16 : Phishy_37
- Track 17 : Reyja_32
- Track 18 : DonkeyMan_32
- Track 19 : BlueFeather_19
- Track 20 : Paito_33
- Track 21 : ShaboiShabazz_33, Periodt_33, TomBrady_33, Avrafan_33, BruceB_33, Mowgli_33, Marmie_33, Jonghyun_33, Sweets_33, Hotshotbaby7_33, Olga_33, Aroostook_33, JorRay_33, Halo_33, Chance64_33, Cherrybomb426_33, Jane_33, Annihilator_33, Phreak_33, BPs_33, Hope_33
- Track 22 : Barkley26_33
- Track 23 : Angel_33, Plagueis_33
- Track 24 : Rabbs_33
- Track 25 : Sizemore_33, Kasen3_33, Grizzly_33
- Track 26 : LouisV14_33
- Track 27 : Terror_33, Taheera_33
- Track 28 : Liefie_33
- Track 29 : AuntGwenStacy_54, Typha_53, Hilltopfarm_53
- Track 30 : Bipper_51, Cracklewink_51
- Track 31 : Eyre_36
- Track 32 : Gudmit_36
- Track 33 : 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 55, it was called in 32 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Angel_33, Annihilator_33, Aroostook_33, Avrafan_33, BPs_33, Bipper_51, BruceB_33, Chance64_33, Cherrybomb426_33, Cracklewink_51, Grizzly_33, Halo_33, Hope_33, Hotshotbaby7_33, 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, YungMoney_51,

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

- AuntGwenStacy_54, Barkley26_33, Clown_57, DonkeyMan_32, Ewald_34, Gudmit_36, Hilltopfarm_53, Jeanie_19, Liefie_33, McGonagall_19, Phishy_37, Reyja_32, Taheera_33, Terror_33, Typha_53,

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

- BlueFeather_19, Coeur_20, CyranoPS_18, DirtyBoi_42, Emperor_20, EpicDab_19, Eyre_36, GRU3_18, Guacamole_40, Hedwig_43, Hitter_43, JasperJr_40, Rahul_20, RayTheFireFly_47, SallySpecial_18,

Summary by start number:

Start 34:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EpicDab_19 (DM),

Start 42:

- Found in 3 of 62 (4.8%) of genes in pham
- Manual Annotations of this start: 3 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Guacamole_40 (CV), Hitter_43 (CV), JasperJr_40 (CV),

Start 44:

- Found in 2 of 62 (3.2%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Eyre_36 (singleton),

Start 46:

- Found in 5 of 62 (8.1%) of genes in pham
- Manual Annotations of this start: 4 of 58
- 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 49:

- Found in 9 of 62 (14.5%) of genes in pham
- Manual Annotations of this start: 6 of 58
- Called 77.8% of time when present
- Phage (with cluster) where this start called: CyranoPS_18 (singleton), DirtyBoi_42 (DB), Gudmit_36 (singleton), Hedwig_43 (DB), RayTheFireFly_47 (DB), Taheera_33 (G1), Terror_33 (G1),

Start 52:

- Found in 3 of 62 (4.8%) of genes in pham
- Manual Annotations of this start: 3 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Emperor_20 (DM), Ewald_34 (DT), Phishy_37 (DT),

Start 54:

- Found in 4 of 62 (6.5%) of genes in pham
- Manual Annotations of this start: 2 of 58
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Coeur_20 (CW2), Rahul_20 (CW2),

Start 55:

- Found in 47 of 62 (75.8%) of genes in pham
- Manual Annotations of this start: 32 of 58
- Called 68.1% 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), Bipper_51 (Y), BruceB_33 (G1), Chance64_33 (G1), Cherrybomb426_33 (G1), Cracklewink_51 (Y), Grizzly_33 (G1), Halo_33 (G1), Hope_33 (G1), Hotshotbaby7_33 (G1), 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), YungMoney_51 (DC1),

Start 58:

- Found in 1 of 62 (1.6%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueFeather_19 (FE),

Start 59:

- Found in 1 of 62 (1.6%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GRU3_18 (CW2),

Start 61:

- Found in 34 of 62 (54.8%) of genes in pham
- Manual Annotations of this start: 2 of 58
- Called 5.9% of time when present
- Phage (with cluster) where this start called: Barkley26_33 (G1), Liefie_33 (G1),

Start 67:

- Found in 3 of 62 (4.8%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 33.3% of time when present
- Phage (with cluster) where this start called: SallySpecial_18 (DM),

Start 73:

- Found in 3 of 62 (4.8%) of genes in pham
- Manual Annotations of this start: 2 of 58
- Called 100.0% 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 13 clusters represented in this pham: singleton, DM, G1, CW1, CW2, DB, FE, DY, Y, DT, DC2, CV, DC1,

Info for manual annotations of cluster CV:

- Start number 42 was manually annotated 3 times for cluster CV.

Info for manual annotations of cluster CW1:

- Start number 46 was manually annotated 2 times for cluster CW1.

Info for manual annotations of cluster CW2:

- Start number 54 was manually annotated 2 times for cluster CW2.

Info for manual annotations of cluster DB:

- Start number 49 was manually annotated 3 times for cluster DB.

Info for manual annotations of cluster DC1:

- Start number 55 was manually annotated 1 time for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 73 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DM:

- Start number 34 was manually annotated 1 time for cluster DM.
- Start number 52 was manually annotated 1 time for cluster DM.
- Start number 67 was manually annotated 1 time for cluster DM.

Info for manual annotations of cluster DT:

- Start number 52 was manually annotated 2 times for cluster DT.

Info for manual annotations of cluster DY:

- Start number 73 was manually annotated 1 time for cluster DY.

Info for manual annotations of cluster FE:

- Start number 58 was manually annotated 1 time for cluster FE.

Info for manual annotations of cluster G1:

- Start number 49 was manually annotated 2 times for cluster G1.
- Start number 55 was manually annotated 29 times for cluster G1.

- Start number 61 was manually annotated 2 times for cluster G1.

Info for manual annotations of cluster Y:

- Start number 46 was manually annotated 2 times for cluster Y.
- Start number 55 was manually annotated 2 times for cluster Y.

Gene Information:

Gene: Angel_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Angel_33:

(16, 29489), (20, 29453), (21, 29447), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (114, 29048), (124, 28985), (127, 28979),

Gene: Annihilator_33 Start: 29315, Stop: 28905, Start Num: 55

Candidate Starts for Annihilator_33:

(16, 29480), (20, 29444), (21, 29438), (28, 29390), (Start: 55 @29315 has 32 MA's), (Start: 61 @29297 has 2 MA's), (74, 29234), (79, 29207), (85, 29186), (114, 29039), (124, 28976), (127, 28970),

Gene: Aroostook_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Aroostook_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: AuntGwenStacy_54 Start: 41198, Stop: 40797, Start Num: 46

Candidate Starts for AuntGwenStacy_54:

(Start: 46 @41198 has 4 MA's), (Start: 55 @41177 has 32 MA's), (68, 41123), (79, 41069), (88, 41027), (97, 40988), (102, 40976), (114, 40901), (121, 40847), (123, 40841),

Gene: Avrafan_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Avrafan_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: BPs_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for BPs_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Barkley26_33 Start: 29328, Stop: 28936, Start Num: 61

Candidate Starts for Barkley26_33:

(16, 29511), (20, 29475), (21, 29469), (Start: 55 @29346 has 32 MA's), (Start: 61 @29328 has 2 MA's), (74, 29265), (79, 29238), (94, 29175), (114, 29070), (124, 29007), (127, 29001), (134, 28977),

Gene: Bipper_51 Start: 39965, Stop: 39576, Start Num: 55

Candidate Starts for Bipper_51:

(Start: 55 @39965 has 32 MA's), (79, 39857), (83, 39851), (84, 39839), (85, 39836), (88, 39815), (93, 39797), (97, 39776), (102, 39764), (110, 39701), (116, 39662), (123, 39641), (124, 39638),

Gene: BlueFeather_19 Start: 14096, Stop: 13785, Start Num: 58

Candidate Starts for BlueFeather_19:

(Start: 58 @14096 has 1 MA's), (68, 14048), (71, 14036), (76, 14006), (79, 13994), (83, 13988), (95, 13925), (96, 13922), (97, 13913), (107, 13874),

Gene: BruceB_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for BruceB_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Chance64_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Chance64_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Cherrybomb426_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Cherrybomb426_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Clown_57 Start: 43040, Stop: 42723, Start Num: 73

Candidate Starts for Clown_57:

(51, 43127), (Start: 55 @43118 has 32 MA's), (57, 43112), (Start: 73 @43040 has 2 MA's), (86, 42977), (90, 42959), (106, 42893), (120, 42788), (123, 42779), (133, 42755),

Gene: Coeur_20 Start: 14347, Stop: 13994, Start Num: 54

Candidate Starts for Coeur_20:

(48, 14356), (50, 14353), (Start: 54 @14347 has 2 MA's), (57, 14338), (64, 14311), (65, 14305), (Start: 67 @14293 has 1 MA's), (78, 14236), (92, 14185), (95, 14164), (99, 14149), (112, 14074), (114, 14071), (118, 14029), (124, 14008), (126, 14005),

Gene: Cracklewink_51 Start: 39958, Stop: 39569, Start Num: 55

Candidate Starts for Cracklewink_51:

(Start: 55 @39958 has 32 MA's), (79, 39850), (83, 39844), (84, 39832), (85, 39829), (88, 39808), (93, 39790), (97, 39769), (102, 39757), (110, 39694), (116, 39655), (123, 39634), (124, 39631),

Gene: CyranoPS_18 Start: 12709, Stop: 12362, Start Num: 49

Candidate Starts for CyranoPS_18:

(31, 12760), (35, 12745), (Start: 49 @12709 has 6 MA's), (74, 12625), (85, 12577),

Gene: DirtyBoi_42 Start: 31803, Stop: 31423, Start Num: 49

Candidate Starts for DirtyBoi_42:

(Start: 49 @31803 has 6 MA's), (87, 31650), (98, 31599), (111, 31527), (125, 31461),

Gene: DonkeyMan_32 Start: 27496, Stop: 27185, Start Num: 73

Candidate Starts for DonkeyMan_32:

(18, 27706), (22, 27691), (24, 27670), (27, 27649), (29, 27646), (Start: 55 @27574 has 32 MA's), (68, 27517), (Start: 73 @27496 has 2 MA's), (75, 27484), (82, 27451), (93, 27391), (106, 27340),

Gene: Emperor_20 Start: 14847, Stop: 14473, Start Num: 52

Candidate Starts for Emperor_20:

(Start: 52 @14847 has 3 MA's), (56, 14838), (65, 14811), (69, 14790), (85, 14718), (95, 14670), (97, 14658), (113, 14583), (115, 14544), (132, 14499), (135, 14484),

Gene: EpicDab_19 Start: 14735, Stop: 14277, Start Num: 34

Candidate Starts for EpicDab_19:

(19, 14819), (26, 14771), (Start: 34 @14735 has 1 MA's), (36, 14732), (37, 14729), (41, 14717), (56, 14681), (57, 14678), (Start: 61 @14666 has 2 MA's), (63, 14654), (68, 14627), (80, 14570), (81, 14564), (91, 14516), (101, 14471), (103, 14462), (109, 14420), (115, 14351), (122, 14330), (133, 14300),

Gene: Ewald_34 Start: 29912, Stop: 29541, Start Num: 52

Candidate Starts for Ewald_34:

(25, 29993), (28, 29975), (32, 29957), (39, 29939), (Start: 52 @29912 has 3 MA's), (53, 29909), (Start: 55 @29903 has 32 MA's), (60, 29891), (62, 29876), (65, 29867), (70, 29843), (77, 29804), (85, 29774), (99, 29708),

Gene: Eyre_36 Start: 27990, Stop: 27601, Start Num: 44

Candidate Starts for Eyre_36:

(Start: 44 @27990 has 1 MA's), (Start: 49 @27981 has 6 MA's), (74, 27888), (87, 27828), (98, 27777), (111, 27705), (125, 27639),

Gene: GRU3_18 Start: 14485, Stop: 14162, Start Num: 59

Candidate Starts for GRU3_18:

(Start: 54 @14497 has 2 MA's), (59, 14485), (62, 14467), (68, 14440), (72, 14422), (96, 14314), (119, 14188),

Gene: Grizzly_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Grizzly_33:

(16, 29489), (20, 29453), (21, 29447), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (94, 29153), (114, 29048), (124, 28985), (127, 28979), (134, 28955),

Gene: Guacamole_40 Start: 32920, Stop: 32501, Start Num: 42

Candidate Starts for Guacamole_40:

(Start: 42 @32920 has 3 MA's), (71, 32830), (93, 32725), (100, 32695), (108, 32662), (126, 32554),

Gene: Gudmit_36 Start: 27005, Stop: 26628, Start Num: 49

Candidate Starts for Gudmit_36:

(43, 27014), (Start: 49 @27005 has 6 MA's), (Start: 55 @26993 has 32 MA's), (56, 26990), (71, 26927), (79, 26885), (83, 26879), (87, 26852), (105, 26777), (111, 26720), (128, 26648), (130, 26639),

Gene: Halo_33 Start: 29319, Stop: 28909, Start Num: 55

Candidate Starts for Halo_33:

(16, 29484), (20, 29448), (21, 29442), (28, 29394), (Start: 55 @29319 has 32 MA's), (Start: 61 @29301 has 2 MA's), (74, 29238), (79, 29211), (85, 29190), (114, 29043), (124, 28980), (127, 28974),

Gene: Hedwig_43 Start: 32226, Stop: 31846, Start Num: 49

Candidate Starts for Hedwig_43:

(23, 32310), (Start: 49 @32226 has 6 MA's), (87, 32073), (98, 32022), (111, 31950), (125, 31884),

Gene: Hilltopfarm_53 Start: 40885, Stop: 40484, Start Num: 46

Candidate Starts for Hilltopfarm_53:

(Start: 46 @40885 has 4 MA's), (Start: 55 @40864 has 32 MA's), (68, 40810), (79, 40756), (88, 40714), (97, 40675), (102, 40663), (114, 40588), (121, 40534), (123, 40528),

Gene: Hitter_43 Start: 32564, Stop: 32145, Start Num: 42

Candidate Starts for Hitter_43:

(Start: 42 @32564 has 3 MA's), (71, 32474), (93, 32369), (100, 32339), (126, 32198), (131, 32183),

Gene: Hope_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Hope_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Hotshotbaby7_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Hotshotbaby7_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Jane_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Jane_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: JasperJr_40 Start: 32920, Stop: 32501, Start Num: 42

Candidate Starts for JasperJr_40:

(Start: 42 @32920 has 3 MA's), (71, 32830), (93, 32725), (100, 32695), (108, 32662), (126, 32554),

Gene: Jeanie_19 Start: 13938, Stop: 13588, Start Num: 46

Candidate Starts for Jeanie_19:

(33, 13974), (Start: 46 @13938 has 4 MA's), (Start: 55 @13917 has 32 MA's), (78, 13812), (95, 13740), (97, 13728), (102, 13716), (117, 13611),

Gene: Jonghyun_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Jonghyun_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: JorRay_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for JorRay_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Kasen3_33 Start: 29325, Stop: 28915, Start Num: 55

Candidate Starts for Kasen3_33:

(16, 29490), (20, 29454), (21, 29448), (Start: 55 @29325 has 32 MA's), (Start: 61 @29307 has 2 MA's), (74, 29244), (79, 29217), (94, 29154), (114, 29049), (124, 28986), (127, 28980), (134, 28956),

Gene: Liefie_33 Start: 29304, Stop: 28912, Start Num: 61

Candidate Starts for Liefie_33:

(16, 29487), (20, 29451), (21, 29445), (28, 29397), (Start: 55 @29322 has 32 MA's), (Start: 61 @29304 has 2 MA's), (74, 29241), (79, 29214), (85, 29193), (114, 29046), (124, 28983), (127, 28977),

Gene: LouisV14_33 Start: 29324, Stop: 28914, Start Num: 55

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), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Marmie_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Marmie_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: McGonagall_19 Start: 13938, Stop: 13588, Start Num: 46

Candidate Starts for McGonagall_19:

(33, 13974), (Start: 46 @13938 has 4 MA's), (Start: 55 @13917 has 32 MA's), (78, 13812), (95, 13740), (97, 13728), (102, 13716), (117, 13611),

Gene: Mowgli_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Mowgli_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Olga_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Olga_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Paito_33 Start: 29505, Stop: 29047, Start Num: 55

Candidate Starts for Paito_33:

(Start: 55 @29505 has 32 MA's), (Start: 61 @29487 has 2 MA's), (69, 29448), (74, 29424), (79, 29397), (94, 29334), (114, 29229), (137, 29088),

Gene: Periodt_33 Start: 29315, Stop: 28905, Start Num: 55

Candidate Starts for Periodt_33:

(16, 29480), (20, 29444), (21, 29438), (28, 29390), (Start: 55 @29315 has 32 MA's), (Start: 61 @29297 has 2 MA's), (74, 29234), (79, 29207), (85, 29186), (114, 29039), (124, 28976), (127, 28970),

Gene: Phishy_37 Start: 31530, Stop: 31159, Start Num: 52

Candidate Starts for Phishy_37:

(25, 31611), (28, 31593), (39, 31557), (Start: 52 @31530 has 3 MA's), (53, 31527), (Start: 55 @31521 has 32 MA's), (60, 31509), (62, 31494), (65, 31485), (70, 31461), (77, 31422), (85, 31392), (97, 31329), (99, 31326),

Gene: Phreak_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for Phreak_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Plagueis_33 Start: 29159, Stop: 28749, Start Num: 55

Candidate Starts for Plagueis_33:

(16, 29324), (20, 29288), (21, 29282), (Start: 55 @29159 has 32 MA's), (Start: 61 @29141 has 2 MA's), (74, 29078), (79, 29051), (114, 28883), (124, 28820), (127, 28814),

Gene: Rabbs_33 Start: 29407, Stop: 28997, Start Num: 55

Candidate Starts for Rabbs_33:

(16, 29572), (20, 29536), (21, 29530), (Start: 49 @29419 has 6 MA's), (Start: 55 @29407 has 32 MA's), (Start: 61 @29389 has 2 MA's), (79, 29299), (85, 29278), (114, 29131), (127, 29062), (134, 29038),

Gene: Rahul_20 Start: 14354, Stop: 14019, Start Num: 54

Candidate Starts for Rahul_20:

(Start: 54 @14354 has 2 MA's), (62, 14327), (66, 14309), (Start: 67 @14303 has 1 MA's), (68, 14297), (76, 14255), (83, 14237), (92, 14195), (114, 14090),

Gene: RayTheFireFly_47 Start: 33400, Stop: 33020, Start Num: 49

Candidate Starts for RayTheFireFly_47:

(23, 33484), (Start: 44 @33409 has 1 MA's), (Start: 49 @33400 has 6 MA's), (87, 33247), (98, 33196), (111, 33124), (125, 33058),

Gene: Reyja_32 Start: 26445, Stop: 26137, Start Num: 73

Candidate Starts for Reyja_32:

(18, 26655), (22, 26640), (24, 26619), (27, 26598), (Start: 55 @26523 has 32 MA's), (68, 26466), (Start: 73 @26445 has 2 MA's), (75, 26433), (93, 26340), (106, 26289),

Gene: SallySpecial_18 Start: 14300, Stop: 13995, Start Num: 67

Candidate Starts for SallySpecial_18:

(38, 14387), (40, 14381), (45, 14369), (Start: 54 @14351 has 2 MA's), (Start: 67 @14300 has 1 MA's), (69, 14291), (74, 14267), (76, 14252), (78, 14243), (85, 14219), (89, 14195), (96, 14168), (97, 14159), (104, 14141), (113, 14084), (115, 14045), (121, 14027), (129, 14009),

Gene: ShaboiShabazz_33 Start: 29324, Stop: 28914, Start Num: 55

Candidate Starts for ShaboiShabazz_33:

(16, 29489), (20, 29453), (21, 29447), (28, 29399), (Start: 55 @29324 has 32 MA's), (Start: 61 @29306 has 2 MA's), (74, 29243), (79, 29216), (85, 29195), (114, 29048), (124, 28985), (127, 28979),

Gene: Sizemore_33 Start: 29325, Stop: 28915, Start Num: 55

Candidate Starts for Sizemore_33:

(16, 29490), (20, 29454), (21, 29448), (Start: 55 @29325 has 32 MA's), (Start: 61 @29307 has 2 MA's), (74, 29244), (79, 29217), (94, 29154), (114, 29049), (124, 28986), (127, 28980), (134, 28956),

Gene: Sweets_33 Start: 29319, Stop: 28909, Start Num: 55

Candidate Starts for Sweets_33:

(16, 29484), (20, 29448), (21, 29442), (28, 29394), (Start: 55 @29319 has 32 MA's), (Start: 61 @29301 has 2 MA's), (74, 29238), (79, 29211), (85, 29190), (114, 29043), (124, 28980), (127, 28974),

Gene: Taheera_33 Start: 29454, Stop: 29032, Start Num: 49

Candidate Starts for Taheera_33:

(16, 29607), (20, 29571), (21, 29565), (Start: 49 @29454 has 6 MA's), (Start: 55 @29442 has 32 MA's), (Start: 61 @29424 has 2 MA's), (74, 29361), (79, 29334), (85, 29313), (114, 29166), (127, 29097), (134, 29073), (136, 29052),

Gene: Terror_33 Start: 29454, Stop: 29032, Start Num: 49

Candidate Starts for Terror_33:

(16, 29607), (20, 29571), (21, 29565), (Start: 49 @29454 has 6 MA's), (Start: 55 @29442 has 32 MA's), (Start: 61 @29424 has 2 MA's), (74, 29361), (79, 29334), (85, 29313), (114, 29166), (127, 29097), (134, 29073), (136, 29052),

Gene: TomBrady_33 Start: 29325, Stop: 28915, Start Num: 55

Candidate Starts for TomBrady_33:

(16, 29490), (20, 29454), (21, 29448), (28, 29400), (Start: 55 @29325 has 32 MA's), (Start: 61 @29307 has 2 MA's), (74, 29244), (79, 29217), (85, 29196), (114, 29049), (124, 28986), (127, 28980),

Gene: Typha_53 Start: 41198, Stop: 40797, Start Num: 46

Candidate Starts for Typha_53:

(Start: 46 @41198 has 4 MA's), (Start: 55 @41177 has 32 MA's), (68, 41123), (79, 41069), (88, 41027), (97, 40988), (102, 40976), (114, 40901), (121, 40847), (123, 40841),

Gene: YungMoney_51 Start: 42233, Stop: 41832, Start Num: 55

Candidate Starts for YungMoney_51:

(17, 42377), (23, 42332), (30, 42305), (47, 42254), (Start: 55 @42233 has 32 MA's), (66, 42188), (86, 42092), (99, 42035), (106, 42008), (123, 41891),