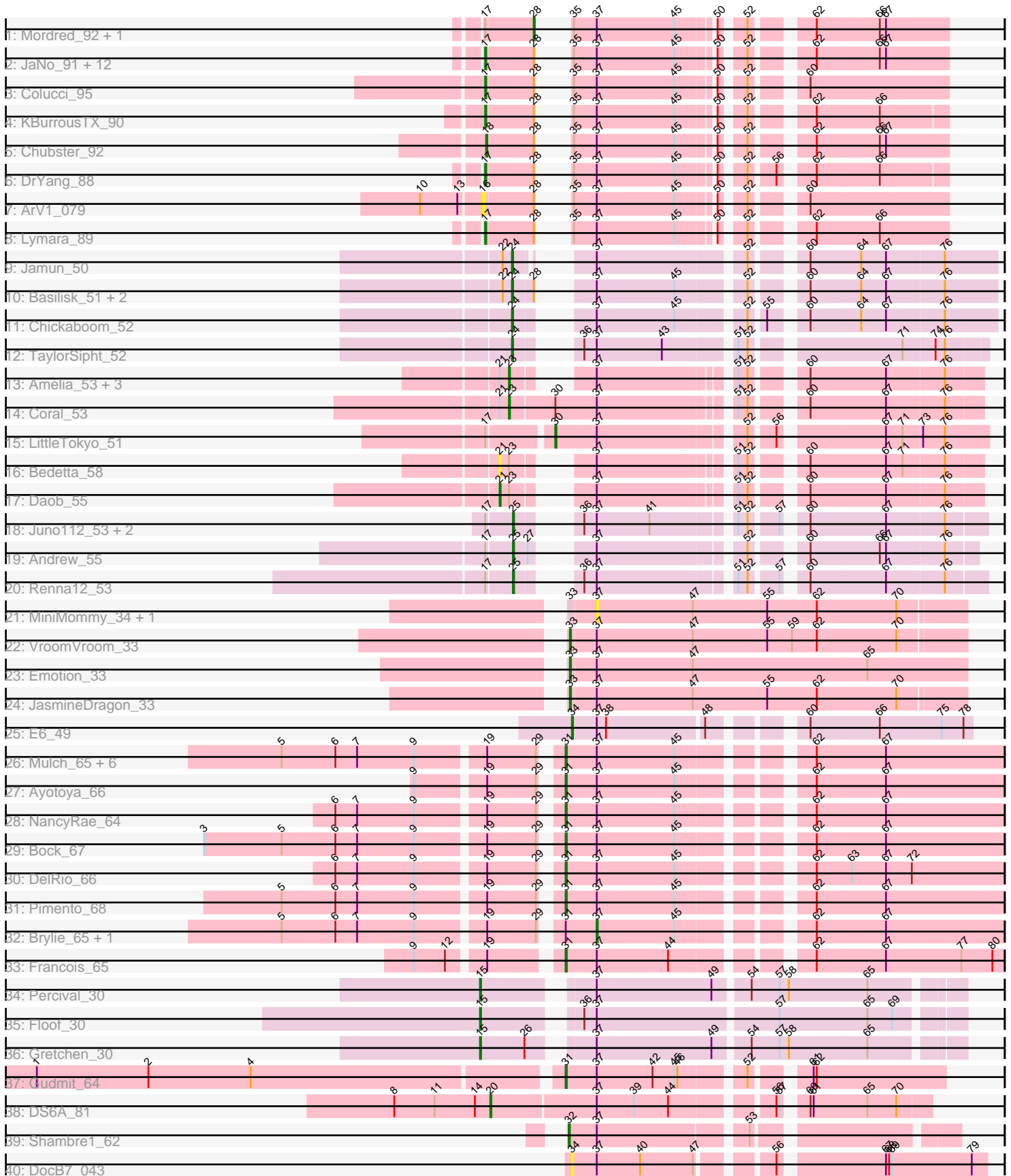


Pham 196521



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 196521 Report

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

Pham number 196521 has 68 members, 7 are drafts.

Phages represented in each track:

- Track 1 : Mordred_92, MoyaNatalis_91
- Track 2 : JaNo_91, HumptyDumpty_92, JayCookie_92, Tophat_93, Conboy_90, Linus_92, RosiePosie_92, Chocolat_92, EdgarPoe_91, PrincessTrina_93, Kabreeze_92, Scavito_93, Chipper1996_930
- Track 3 : Colucci_95
- Track 4 : KBurrousTX_90
- Track 5 : Chubster_92
- Track 6 : DrYang_88
- Track 7 : ArV1_079
- Track 8 : Lymara_89
- Track 9 : Jamun_50
- Track 10 : Basilisk_51, Vulpecula_50, Ruchi_50
- Track 11 : Chickaboom_52
- Track 12 : TaylorSipht_52
- Track 13 : Amelia_53, HannahPhantana_54, Polka_53, Colusalem_56
- Track 14 : Coral_53
- Track 15 : LittleTokyo_51
- Track 16 : Bedetta_58
- Track 17 : Daob_55
- Track 18 : Juno112_53, RedFox_54, Leona_53
- Track 19 : Andrew_55
- Track 20 : Renna12_53
- Track 21 : MiniMommy_34, ShakeltOph_34
- Track 22 : VroomVroom_33
- Track 23 : Emotion_33
- Track 24 : JasmineDragon_33
- Track 25 : E6_49
- Track 26 : Mulch_65, GrandSlam_67, Nadeem_65, Chop_67, WheatThin_64, Parada_65, Hamood_67
- Track 27 : Ayotoya_66
- Track 28 : NancyRae_64
- Track 29 : Bock_67
- Track 30 : DelRio_66
- Track 31 : Pimento_68
- Track 32 : Brylie_65, BetterKatz_65
- Track 33 : Francois_65
- Track 34 : Percival_30

- Track 35 : Floof_30
- Track 36 : Gretchen_30
- Track 37 : Gudmit_64
- Track 38 : DS6A_81
- Track 39 : Shambre1_62
- Track 40 : DocB7_043

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

The start number called the most often in the published annotations is 17, it was called in 17 of the 61 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Chipper1996_930, Chocolat_92, Colucci_95, Conboy_90, DrYang_88, EdgarPoe_91, HumptyDumpty_92, JaNo_91, JayCookie_92, KBurrousTX_90, Kabreeze_92, Linus_92, Lymara_89, PrincessTrina_93, RosiePosie_92, Scavito_93, Tophat_93,

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

- Andrew_55, Juno112_53, Leona_53, LittleTokyo_51, Mordred_92, MoyaNatalis_91, RedFox_54, Renna12_53,

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

- Amelia_53, ArV1_079, Ayotoya_66, Basilisk_51, Bedetta_58, BetterKatz_65, Bock_67, Brylie_65, Chickaboom_52, Chop_67, Chubster_92, Colusalem_56, Coral_53, DS6A_81, Daob_55, DelRio_66, DocB7_043, E6_49, Emotion_33, Floof_30, Francois_65, GrandSlam_67, Gretchen_30, Gudmit_64, Hamood_67, HannahPhantana_54, Jamun_50, JasmineDragon_33, MiniMommy_34, Mulch_65, Nadeem_65, NancyRae_64, Parada_65, Percival_30, Pimento_68, Polka_53, Ruchi_50, ShakeltOph_34, Shambre1_62, TaylorSipht_52, VroomVroom_33, Vulpecula_50, WheatThin_64,

Summary by start number:

Start 15:

- Found in 3 of 68 (4.4%) of genes in pham
- Manual Annotations of this start: 3 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Floof_30 (EH), Gretchen_30 (EH), Percival_30 (EH),

Start 16:

- Found in 1 of 68 (1.5%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ArV1_079 (AR),

Start 17:

- Found in 25 of 68 (36.8%) of genes in pham
- Manual Annotations of this start: 17 of 61

- Called 68.0% of time when present
- Phage (with cluster) where this start called: Chipper1996_930 (AR), Chocolat_92 (AR), Colucci_95 (AR), Conboy_90 (AR), DrYang_88 (AR), EdgarPoe_91 (AR), HumptyDumpty_92 (AR), JaNo_91 (AR), JayCookie_92 (AR), KBurroustX_90 (AR), Kabreeze_92 (AR), Linus_92 (AR), Lymara_89 (AR), PrincessTrina_93 (AR), RosiePosie_92 (AR), Scavito_93 (AR), Tophat_93 (AR),

Start 18:

- Found in 1 of 68 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chubster_92 (AR),

Start 20:

- Found in 1 of 68 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DS6A_81 (singleton),

Start 21:

- Found in 7 of 68 (10.3%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 28.6% of time when present
- Phage (with cluster) where this start called: Bedetta_58 (AS2), Daob_55 (AS2),

Start 23:

- Found in 7 of 68 (10.3%) of genes in pham
- Manual Annotations of this start: 4 of 61
- Called 71.4% of time when present
- Phage (with cluster) where this start called: Amelia_53 (AS2), Colusalem_56 (AS2), Coral_53 (AS2), HannahPhantana_54 (AS2), Polka_53 (AS2),

Start 24:

- Found in 6 of 68 (8.8%) of genes in pham
- Manual Annotations of this start: 6 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Basilisk_51 (AS1), Chickaboom_52 (AS1), Jamun_50 (AS1), Ruchi_50 (AS1), TaylorSipht_52 (AS1), Vulpecula_50 (AS1),

Start 25:

- Found in 5 of 68 (7.4%) of genes in pham
- Manual Annotations of this start: 5 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Andrew_55 (AS3), Juno112_53 (AS3), Leona_53 (AS3), RedFox_54 (AS3), Renna12_53 (AS3),

Start 28:

- Found in 24 of 68 (35.3%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Mordred_92 (AR), MoyaNatalis_91 (AR),

Start 30:

- Found in 2 of 68 (2.9%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 50.0% of time when present
- Phage (with cluster) where this start called: LittleTokyo_51 (AS2),

Start 31:

- Found in 16 of 68 (23.5%) of genes in pham
- Manual Annotations of this start: 14 of 61
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Ayotoya_66 (DI), Bock_67 (DI), Chop_67 (DI), DelRio_66 (DI), Francois_65 (DI), GrandSlam_67 (DI), Gudmit_64 (singleton), Hamood_67 (DI), Mulch_65 (DI), Nadeem_65 (DI), NancyRae_64 (DI), Parada_65 (DI), Pimento_68 (DI), WheatThin_64 (DI),

Start 32:

- Found in 1 of 68 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Shambre1_62 (singleton),

Start 33:

- Found in 5 of 68 (7.4%) of genes in pham
- Manual Annotations of this start: 3 of 61
- Called 60.0% of time when present
- Phage (with cluster) where this start called: Emotion_33 (AZ4), JasmineDragon_33 (AZ4), VroomVroom_33 (AZ4),

Start 34:

- Found in 2 of 68 (2.9%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DocB7_043 (singleton), E6_49 (BW),

Start 37:

- Found in 68 of 68 (100.0%) of genes in pham
- Manual Annotations of this start: 2 of 61
- Called 5.9% of time when present
- Phage (with cluster) where this start called: BetterKatz_65 (DI), Brylie_65 (DI), MiniMommy_34 (AZ4), ShakeltOph_34 (AZ4),

Summary by clusters:

There are 9 clusters represented in this pham: AS3, AS2, singleton, EH, DI, AS1, BW, AR, AZ4,

Info for manual annotations of cluster AR:

- Start number 17 was manually annotated 17 times for cluster AR.
- Start number 18 was manually annotated 1 time for cluster AR.
- Start number 28 was manually annotated 1 time for cluster AR.

Info for manual annotations of cluster AS1:

- Start number 24 was manually annotated 6 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 21 was manually annotated 1 time for cluster AS2.
- Start number 23 was manually annotated 4 times for cluster AS2.
- Start number 30 was manually annotated 1 time for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 25 was manually annotated 5 times for cluster AS3.

Info for manual annotations of cluster AZ4:

- Start number 33 was manually annotated 3 times for cluster AZ4.

Info for manual annotations of cluster BW:

- Start number 34 was manually annotated 1 time for cluster BW.

Info for manual annotations of cluster DI:

- Start number 31 was manually annotated 13 times for cluster DI.
- Start number 37 was manually annotated 2 times for cluster DI.

Info for manual annotations of cluster EH:

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

Gene Information:

Gene: Amelia_53 Start: 32651, Stop: 33019, Start Num: 23

Candidate Starts for Amelia_53:

(Start: 21 @32642 has 1 MA's), (Start: 23 @32651 has 4 MA's), (Start: 37 @32693 has 2 MA's), (51, 32810), (52, 32819), (60, 32858), (67, 32930), (76, 32984),

Gene: Andrew_55 Start: 33040, Stop: 33402, Start Num: 25

Candidate Starts for Andrew_55:

(Start: 17 @33016 has 17 MA's), (Start: 25 @33040 has 5 MA's), (27, 33052), (Start: 37 @33079 has 2 MA's), (52, 33208), (60, 33247), (66, 33313), (67, 33319), (76, 33373),

Gene: ArV1_079 Start: 59307, Stop: 59669, Start Num: 16

Candidate Starts for ArV1_079:

(10, 59250), (13, 59286), (16, 59307), (Start: 28 @59352 has 1 MA's), (35, 59355), (Start: 37 @59376 has 2 MA's), (45, 59451), (50, 59481), (52, 59499), (60, 59538),

Gene: Ayotoya_66 Start: 43183, Stop: 43569, Start Num: 31

Candidate Starts for Ayotoya_66:

(9, 43066), (19, 43126), (29, 43171), (Start: 31 @43183 has 14 MA's), (Start: 37 @43213 has 2 MA's), (45, 43288), (62, 43390), (67, 43456),

Gene: Basilisk_51 Start: 33012, Stop: 33398, Start Num: 24

Candidate Starts for Basilisk_51:

(22, 33003), (Start: 24 @33012 has 6 MA's), (Start: 28 @33030 has 1 MA's), (Start: 37 @33051 has 2 MA's), (45, 33126), (52, 33183), (60, 33222), (64, 33270), (67, 33294), (76, 33348),

Gene: Bedetta_58 Start: 32801, Stop: 33178, Start Num: 21

Candidate Starts for Bedetta_58:

(Start: 21 @32801 has 1 MA's), (Start: 23 @32810 has 4 MA's), (Start: 37 @32852 has 2 MA's), (51, 32969), (52, 32978), (60, 33017), (67, 33089), (71, 33104), (76, 33143),

Gene: BetterKatz_65 Start: 42412, Stop: 42768, Start Num: 37

Candidate Starts for BetterKatz_65:

(5, 42142), (6, 42190), (7, 42211), (9, 42265), (19, 42325), (29, 42370), (Start: 31 @42382 has 14 MA's), (Start: 37 @42412 has 2 MA's), (45, 42487), (62, 42589), (67, 42655),

Gene: Bock_67 Start: 42626, Stop: 43012, Start Num: 31

Candidate Starts for Bock_67:

(3, 42311), (5, 42386), (6, 42434), (7, 42455), (9, 42509), (19, 42569), (29, 42614), (Start: 31 @42626 has 14 MA's), (Start: 37 @42656 has 2 MA's), (45, 42731), (62, 42833), (67, 42899),

Gene: Brylie_65 Start: 42235, Stop: 42591, Start Num: 37

Candidate Starts for Brylie_65:

(5, 41965), (6, 42013), (7, 42034), (9, 42088), (19, 42148), (29, 42193), (Start: 31 @42205 has 14 MA's), (Start: 37 @42235 has 2 MA's), (45, 42310), (62, 42412), (67, 42478),

Gene: Chickaboom_52 Start: 33345, Stop: 33731, Start Num: 24

Candidate Starts for Chickaboom_52:

(Start: 24 @33345 has 6 MA's), (Start: 37 @33384 has 2 MA's), (45, 33459), (52, 33516), (55, 33528), (60, 33555), (64, 33603), (67, 33627), (76, 33681),

Gene: Chipper1996_930 Start: 60998, Stop: 61360, Start Num: 17

Candidate Starts for Chipper1996_930:

(Start: 17 @60998 has 17 MA's), (Start: 28 @61043 has 1 MA's), (35, 61046), (Start: 37 @61067 has 2 MA's), (45, 61142), (50, 61172), (52, 61190), (62, 61235), (66, 61295), (67, 61301),

Gene: Chocolat_92 Start: 60705, Stop: 61067, Start Num: 17

Candidate Starts for Chocolat_92:

(Start: 17 @60705 has 17 MA's), (Start: 28 @60750 has 1 MA's), (35, 60753), (Start: 37 @60774 has 2 MA's), (45, 60849), (50, 60879), (52, 60897), (62, 60942), (66, 61002), (67, 61008),

Gene: Chop_67 Start: 43371, Stop: 43757, Start Num: 31

Candidate Starts for Chop_67:

(5, 43131), (6, 43179), (7, 43200), (9, 43254), (19, 43314), (29, 43359), (Start: 31 @43371 has 14 MA's), (Start: 37 @43401 has 2 MA's), (45, 43476), (62, 43578), (67, 43644),

Gene: Chubster_92 Start: 60945, Stop: 61307, Start Num: 18

Candidate Starts for Chubster_92:

(Start: 18 @60945 has 1 MA's), (Start: 28 @60990 has 1 MA's), (35, 60993), (Start: 37 @61014 has 2 MA's), (45, 61089), (50, 61119), (52, 61137), (62, 61182), (66, 61242), (67, 61248),

Gene: Colucci_95 Start: 61317, Stop: 61679, Start Num: 17

Candidate Starts for Colucci_95:

(Start: 17 @61317 has 17 MA's), (Start: 28 @61362 has 1 MA's), (35, 61365), (Start: 37 @61386 has 2 MA's), (45, 61461), (50, 61491), (52, 61509), (60, 61548),

Gene: Colusalem_56 Start: 32628, Stop: 32996, Start Num: 23

Candidate Starts for Colusalem_56:

(Start: 21 @32619 has 1 MA's), (Start: 23 @32628 has 4 MA's), (Start: 37 @32670 has 2 MA's), (51, 32787), (52, 32796), (60, 32835), (67, 32907), (76, 32961),

Gene: Conboy_90 Start: 60454, Stop: 60816, Start Num: 17

Candidate Starts for Conboy_90:

(Start: 17 @60454 has 17 MA's), (Start: 28 @60499 has 1 MA's), (35, 60502), (Start: 37 @60523 has 2 MA's), (45, 60598), (50, 60628), (52, 60646), (62, 60691), (66, 60751), (67, 60757),

Gene: Coral_53 Start: 32516, Stop: 32923, Start Num: 23

Candidate Starts for Coral_53:

(Start: 21 @32507 has 1 MA's), (Start: 23 @32516 has 4 MA's), (Start: 30 @32558 has 1 MA's), (Start: 37 @32597 has 2 MA's), (51, 32714), (52, 32723), (60, 32762), (67, 32834), (76, 32888),

Gene: DS6A_81 Start: 51791, Stop: 52174, Start Num: 20

Candidate Starts for DS6A_81:

(8, 51698), (11, 51737), (14, 51776), (Start: 20 @51791 has 1 MA's), (Start: 37 @51890 has 2 MA's), (39, 51926), (44, 51959), (56, 52043), (57, 52046), (60, 52061), (61, 52064), (65, 52115), (70, 52142),

Gene: Daob_55 Start: 32991, Stop: 33368, Start Num: 21

Candidate Starts for Daob_55:

(Start: 21 @32991 has 1 MA's), (Start: 23 @33000 has 4 MA's), (Start: 37 @33042 has 2 MA's), (51, 33159), (52, 33168), (60, 33207), (67, 33279), (76, 33333),

Gene: DelRio_66 Start: 43392, Stop: 43778, Start Num: 31

Candidate Starts for DelRio_66:

(6, 43200), (7, 43221), (9, 43275), (19, 43335), (29, 43380), (Start: 31 @43392 has 14 MA's), (Start: 37 @43422 has 2 MA's), (45, 43497), (62, 43599), (63, 43632), (67, 43665), (72, 43689),

Gene: DocB7_043 Start: 40188, Stop: 39829, Start Num: 34

Candidate Starts for DocB7_043:

(Start: 34 @40188 has 1 MA's), (Start: 37 @40164 has 2 MA's), (40, 40122), (47, 40071), (56, 40014), (67, 39924), (68, 39921), (69, 39918), (79, 39843),

Gene: DrYang_88 Start: 60507, Stop: 60866, Start Num: 17

Candidate Starts for DrYang_88:

(Start: 17 @60507 has 17 MA's), (Start: 28 @60552 has 1 MA's), (35, 60555), (Start: 37 @60576 has 2 MA's), (45, 60651), (50, 60681), (52, 60699), (56, 60720), (62, 60744), (66, 60804),

Gene: E6_49 Start: 32814, Stop: 33161, Start Num: 34

Candidate Starts for E6_49:

(Start: 34 @32814 has 1 MA's), (Start: 37 @32838 has 2 MA's), (38, 32847), (48, 32937), (60, 33006), (66, 33072), (75, 33132), (78, 33153),

Gene: EdgarPoe_91 Start: 60862, Stop: 61224, Start Num: 17

Candidate Starts for EdgarPoe_91:

(Start: 17 @60862 has 17 MA's), (Start: 28 @60907 has 1 MA's), (35, 60910), (Start: 37 @60931 has 2 MA's), (45, 61006), (50, 61036), (52, 61054), (62, 61099), (66, 61159), (67, 61165),

Gene: Emotion_33 Start: 24307, Stop: 24687, Start Num: 33

Candidate Starts for Emotion_33:

(Start: 33 @24307 has 3 MA's), (Start: 37 @24331 has 2 MA's), (47, 24424), (65, 24592),

Gene: Floof_30 Start: 23138, Stop: 23557, Start Num: 15

Candidate Starts for Floof_30:

(Start: 15 @23138 has 3 MA's), (36, 23213), (Start: 37 @23225 has 2 MA's), (57, 23393), (65, 23477), (69, 23501),

Gene: Francois_65 Start: 42391, Stop: 42777, Start Num: 31

Candidate Starts for Francois_65:

(9, 42274), (12, 42304), (19, 42334), (Start: 31 @42391 has 14 MA's), (Start: 37 @42421 has 2 MA's), (44, 42490), (62, 42598), (67, 42664), (77, 42736), (80, 42766),

Gene: GrandSlam_67 Start: 43371, Stop: 43757, Start Num: 31

Candidate Starts for GrandSlam_67:

(5, 43131), (6, 43179), (7, 43200), (9, 43254), (19, 43314), (29, 43359), (Start: 31 @43371 has 14 MA's), (Start: 37 @43401 has 2 MA's), (45, 43476), (62, 43578), (67, 43644),

Gene: Gretchen_30 Start: 24301, Stop: 24720, Start Num: 15

Candidate Starts for Gretchen_30:

(Start: 15 @24301 has 3 MA's), (26, 24343), (Start: 37 @24388 has 2 MA's), (49, 24499), (54, 24529), (57, 24556), (58, 24565), (65, 24640),

Gene: Gudmit_64 Start: 38580, Stop: 38909, Start Num: 31

Candidate Starts for Gudmit_64:

(1, 38091), (2, 38199), (4, 38298), (Start: 31 @38580 has 14 MA's), (Start: 37 @38610 has 2 MA's), (42, 38664), (45, 38685), (46, 38688), (52, 38742), (61, 38784), (62, 38787),

Gene: Hamood_67 Start: 43371, Stop: 43757, Start Num: 31

Candidate Starts for Hamood_67:

(5, 43131), (6, 43179), (7, 43200), (9, 43254), (19, 43314), (29, 43359), (Start: 31 @43371 has 14 MA's), (Start: 37 @43401 has 2 MA's), (45, 43476), (62, 43578), (67, 43644),

Gene: HannahPhantana_54 Start: 32646, Stop: 33014, Start Num: 23

Candidate Starts for HannahPhantana_54:

(Start: 21 @32637 has 1 MA's), (Start: 23 @32646 has 4 MA's), (Start: 37 @32688 has 2 MA's), (51, 32805), (52, 32814), (60, 32853), (67, 32925), (76, 32979),

Gene: HumptyDumpty_92 Start: 60665, Stop: 61027, Start Num: 17

Candidate Starts for HumptyDumpty_92:

(Start: 17 @60665 has 17 MA's), (Start: 28 @60710 has 1 MA's), (35, 60713), (Start: 37 @60734 has 2 MA's), (45, 60809), (50, 60839), (52, 60857), (62, 60902), (66, 60962), (67, 60968),

Gene: JaNo_91 Start: 60636, Stop: 60998, Start Num: 17

Candidate Starts for JaNo_91:

(Start: 17 @60636 has 17 MA's), (Start: 28 @60681 has 1 MA's), (35, 60684), (Start: 37 @60705 has 2 MA's), (45, 60780), (50, 60810), (52, 60828), (62, 60873), (66, 60933), (67, 60939),

Gene: Jamun_50 Start: 33451, Stop: 33831, Start Num: 24

Candidate Starts for Jamun_50:

(22, 33442), (Start: 24 @33451 has 6 MA's), (Start: 37 @33484 has 2 MA's), (52, 33616), (60, 33655), (64, 33703), (67, 33727), (76, 33781),

Gene: JasmineDragon_33 Start: 23709, Stop: 24083, Start Num: 33

Candidate Starts for JasmineDragon_33:

(Start: 33 @23709 has 3 MA's), (Start: 37 @23733 has 2 MA's), (47, 23826), (55, 23898), (62, 23946), (70, 24021),

Gene: JayCookie_92 Start: 61198, Stop: 61560, Start Num: 17

Candidate Starts for JayCookie_92:

(Start: 17 @61198 has 17 MA's), (Start: 28 @61243 has 1 MA's), (35, 61246), (Start: 37 @61267 has 2 MA's), (45, 61342), (50, 61372), (52, 61390), (62, 61435), (66, 61495), (67, 61501),

Gene: Juno112_53 Start: 33147, Stop: 33518, Start Num: 25

Candidate Starts for Juno112_53:

(Start: 17 @33123 has 17 MA's), (Start: 25 @33147 has 5 MA's), (36, 33174), (Start: 37 @33186 has 2 MA's), (41, 33237), (51, 33306), (52, 33315), (57, 33339), (60, 33354), (67, 33426), (76, 33480),

Gene: KBurrousTX_90 Start: 62135, Stop: 62494, Start Num: 17

Candidate Starts for KBurrousTX_90:

(Start: 17 @62135 has 17 MA's), (Start: 28 @62180 has 1 MA's), (35, 62183), (Start: 37 @62204 has 2 MA's), (45, 62279), (50, 62309), (52, 62327), (62, 62372), (66, 62432),

Gene: Kabreeze_92 Start: 60722, Stop: 61084, Start Num: 17

Candidate Starts for Kabreeze_92:

(Start: 17 @60722 has 17 MA's), (Start: 28 @60767 has 1 MA's), (35, 60770), (Start: 37 @60791 has 2 MA's), (45, 60866), (50, 60896), (52, 60914), (62, 60959), (66, 61019), (67, 61025),

Gene: Leona_53 Start: 33226, Stop: 33597, Start Num: 25

Candidate Starts for Leona_53:

(Start: 17 @33202 has 17 MA's), (Start: 25 @33226 has 5 MA's), (36, 33253), (Start: 37 @33265 has 2 MA's), (41, 33316), (51, 33385), (52, 33394), (57, 33418), (60, 33433), (67, 33505), (76, 33559),

Gene: Linus_92 Start: 61170, Stop: 61532, Start Num: 17

Candidate Starts for Linus_92:

(Start: 17 @61170 has 17 MA's), (Start: 28 @61215 has 1 MA's), (35, 61218), (Start: 37 @61239 has 2 MA's), (45, 61314), (50, 61344), (52, 61362), (62, 61407), (66, 61467), (67, 61473),

Gene: LittleTokyo_51 Start: 31575, Stop: 31949, Start Num: 30

Candidate Starts for LittleTokyo_51:

(Start: 17 @31518 has 17 MA's), (Start: 30 @31575 has 1 MA's), (Start: 37 @31614 has 2 MA's), (52, 31743), (56, 31764), (67, 31854), (71, 31869), (73, 31887), (76, 31908),

Gene: Lymara_89 Start: 59643, Stop: 60005, Start Num: 17

Candidate Starts for Lymara_89:

(Start: 17 @59643 has 17 MA's), (Start: 28 @59688 has 1 MA's), (35, 59691), (Start: 37 @59712 has 2 MA's), (45, 59787), (50, 59817), (52, 59835), (62, 59880), (66, 59940),

Gene: MiniMommy_34 Start: 23734, Stop: 24084, Start Num: 37

Candidate Starts for MiniMommy_34:

(Start: 33 @23710 has 3 MA's), (Start: 37 @23734 has 2 MA's), (47, 23827), (55, 23899), (62, 23947), (70, 24022),

Gene: Mordred_92 Start: 60806, Stop: 61123, Start Num: 28

Candidate Starts for Mordred_92:

(Start: 17 @60761 has 17 MA's), (Start: 28 @60806 has 1 MA's), (35, 60809), (Start: 37 @60830 has 2 MA's), (45, 60905), (50, 60935), (52, 60953), (62, 60998), (66, 61058), (67, 61064),

Gene: MoyaNatalis_91 Start: 60689, Stop: 61006, Start Num: 28

Candidate Starts for MoyaNatalis_91:

(Start: 17 @60644 has 17 MA's), (Start: 28 @60689 has 1 MA's), (35, 60692), (Start: 37 @60713 has 2 MA's), (45, 60788), (50, 60818), (52, 60836), (62, 60881), (66, 60941), (67, 60947),

Gene: Mulch_65 Start: 42205, Stop: 42591, Start Num: 31

Candidate Starts for Mulch_65:

(5, 41965), (6, 42013), (7, 42034), (9, 42088), (19, 42148), (29, 42193), (Start: 31 @42205 has 14 MA's), (Start: 37 @42235 has 2 MA's), (45, 42310), (62, 42412), (67, 42478),

Gene: Nadeem_65 Start: 42193, Stop: 42579, Start Num: 31

Candidate Starts for Nadeem_65:

(5, 41953), (6, 42001), (7, 42022), (9, 42076), (19, 42136), (29, 42181), (Start: 31 @42193 has 14 MA's), (Start: 37 @42223 has 2 MA's), (45, 42298), (62, 42400), (67, 42466),

Gene: NancyRae_64 Start: 42143, Stop: 42529, Start Num: 31

Candidate Starts for NancyRae_64:

(6, 41951), (7, 41972), (9, 42026), (19, 42086), (29, 42131), (Start: 31 @42143 has 14 MA's), (Start: 37 @42173 has 2 MA's), (45, 42248), (62, 42350), (67, 42416),

Gene: Parada_65 Start: 42205, Stop: 42591, Start Num: 31

Candidate Starts for Parada_65:

(5, 41965), (6, 42013), (7, 42034), (9, 42088), (19, 42148), (29, 42193), (Start: 31 @42205 has 14 MA's), (Start: 37 @42235 has 2 MA's), (45, 42310), (62, 42412), (67, 42478),

Gene: Percival_30 Start: 24132, Stop: 24551, Start Num: 15

Candidate Starts for Percival_30:

(Start: 15 @24132 has 3 MA's), (Start: 37 @24219 has 2 MA's), (49, 24330), (54, 24360), (57, 24387), (58, 24396), (65, 24471),

Gene: Pimento_68 Start: 42324, Stop: 42710, Start Num: 31

Candidate Starts for Pimento_68:

(5, 42084), (6, 42132), (7, 42153), (9, 42207), (19, 42267), (29, 42312), (Start: 31 @42324 has 14 MA's), (Start: 37 @42354 has 2 MA's), (45, 42429), (62, 42531), (67, 42597),

Gene: Polka_53 Start: 32500, Stop: 32868, Start Num: 23

Candidate Starts for Polka_53:

(Start: 21 @32491 has 1 MA's), (Start: 23 @32500 has 4 MA's), (Start: 37 @32542 has 2 MA's), (51, 32659), (52, 32668), (60, 32707), (67, 32779), (76, 32833),

Gene: PrincessTrina_93 Start: 60952, Stop: 61314, Start Num: 17

Candidate Starts for PrincessTrina_93:

(Start: 17 @60952 has 17 MA's), (Start: 28 @60997 has 1 MA's), (35, 61000), (Start: 37 @61021 has 2 MA's), (45, 61096), (50, 61126), (52, 61144), (62, 61189), (66, 61249), (67, 61255),

Gene: RedFox_54 Start: 33244, Stop: 33615, Start Num: 25

Candidate Starts for RedFox_54:

(Start: 17 @33220 has 17 MA's), (Start: 25 @33244 has 5 MA's), (36, 33271), (Start: 37 @33283 has 2 MA's), (41, 33334), (51, 33403), (52, 33412), (57, 33436), (60, 33451), (67, 33523), (76, 33577),

Gene: Renna12_53 Start: 33097, Stop: 33468, Start Num: 25

Candidate Starts for Renna12_53:

(Start: 17 @33073 has 17 MA's), (Start: 25 @33097 has 5 MA's), (36, 33124), (Start: 37 @33136 has 2 MA's), (51, 33256), (52, 33265), (57, 33289), (60, 33304), (67, 33376), (76, 33430),

Gene: RosiePosie_92 Start: 60817, Stop: 61179, Start Num: 17

Candidate Starts for RosiePosie_92:

(Start: 17 @60817 has 17 MA's), (Start: 28 @60862 has 1 MA's), (35, 60865), (Start: 37 @60886 has 2 MA's), (45, 60961), (50, 60991), (52, 61009), (62, 61054), (66, 61114), (67, 61120),

Gene: Ruchi_50 Start: 32934, Stop: 33320, Start Num: 24

Candidate Starts for Ruchi_50:

(22, 32925), (Start: 24 @32934 has 6 MA's), (Start: 28 @32952 has 1 MA's), (Start: 37 @32973 has 2 MA's), (45, 33048), (52, 33105), (60, 33144), (64, 33192), (67, 33216), (76, 33270),

Gene: Scavito_93 Start: 60810, Stop: 61172, Start Num: 17

Candidate Starts for Scavito_93:

(Start: 17 @60810 has 17 MA's), (Start: 28 @60855 has 1 MA's), (35, 60858), (Start: 37 @60879 has 2 MA's), (45, 60954), (50, 60984), (52, 61002), (62, 61047), (66, 61107), (67, 61113),

Gene: ShakeltOph_34 Start: 23733, Stop: 24083, Start Num: 37

Candidate Starts for ShakeltOph_34:

(Start: 33 @23709 has 3 MA's), (Start: 37 @23733 has 2 MA's), (47, 23826), (55, 23898), (62, 23946), (70, 24021),

Gene: Shambre1_62 Start: 40086, Stop: 40415, Start Num: 32

Candidate Starts for Shambre1_62:

(Start: 32 @40086 has 1 MA's), (Start: 37 @40113 has 2 MA's), (53, 40245),

Gene: TaylorSipht_52 Start: 33579, Stop: 33953, Start Num: 24

Candidate Starts for TaylorSipht_52:

(Start: 24 @33579 has 6 MA's), (36, 33606), (Start: 37 @33618 has 2 MA's), (43, 33681), (51, 33741), (52, 33750), (71, 33876), (74, 33906), (76, 33915),

Gene: Tophat_93 Start: 60999, Stop: 61361, Start Num: 17

Candidate Starts for Tophat_93:

(Start: 17 @60999 has 17 MA's), (Start: 28 @61044 has 1 MA's), (35, 61047), (Start: 37 @61068 has 2 MA's), (45, 61143), (50, 61173), (52, 61191), (62, 61236), (66, 61296), (67, 61302),

Gene: VroomVroom_33 Start: 23804, Stop: 24178, Start Num: 33

Candidate Starts for VroomVroom_33:

(Start: 33 @23804 has 3 MA's), (Start: 37 @23828 has 2 MA's), (47, 23921), (55, 23993), (59, 24017), (62, 24041), (70, 24116),

Gene: Vulpecula_50 Start: 32594, Stop: 32980, Start Num: 24

Candidate Starts for Vulpecula_50:

(22, 32585), (Start: 24 @32594 has 6 MA's), (Start: 28 @32612 has 1 MA's), (Start: 37 @32633 has 2 MA's), (45, 32708), (52, 32765), (60, 32804), (64, 32852), (67, 32876), (76, 32930),

Gene: WheatThin_64 Start: 42193, Stop: 42579, Start Num: 31

Candidate Starts for WheatThin_64:

(5, 41953), (6, 42001), (7, 42022), (9, 42076), (19, 42136), (29, 42181), (Start: 31 @42193 has 14 MA's), (Start: 37 @42223 has 2 MA's), (45, 42298), (62, 42400), (67, 42466),