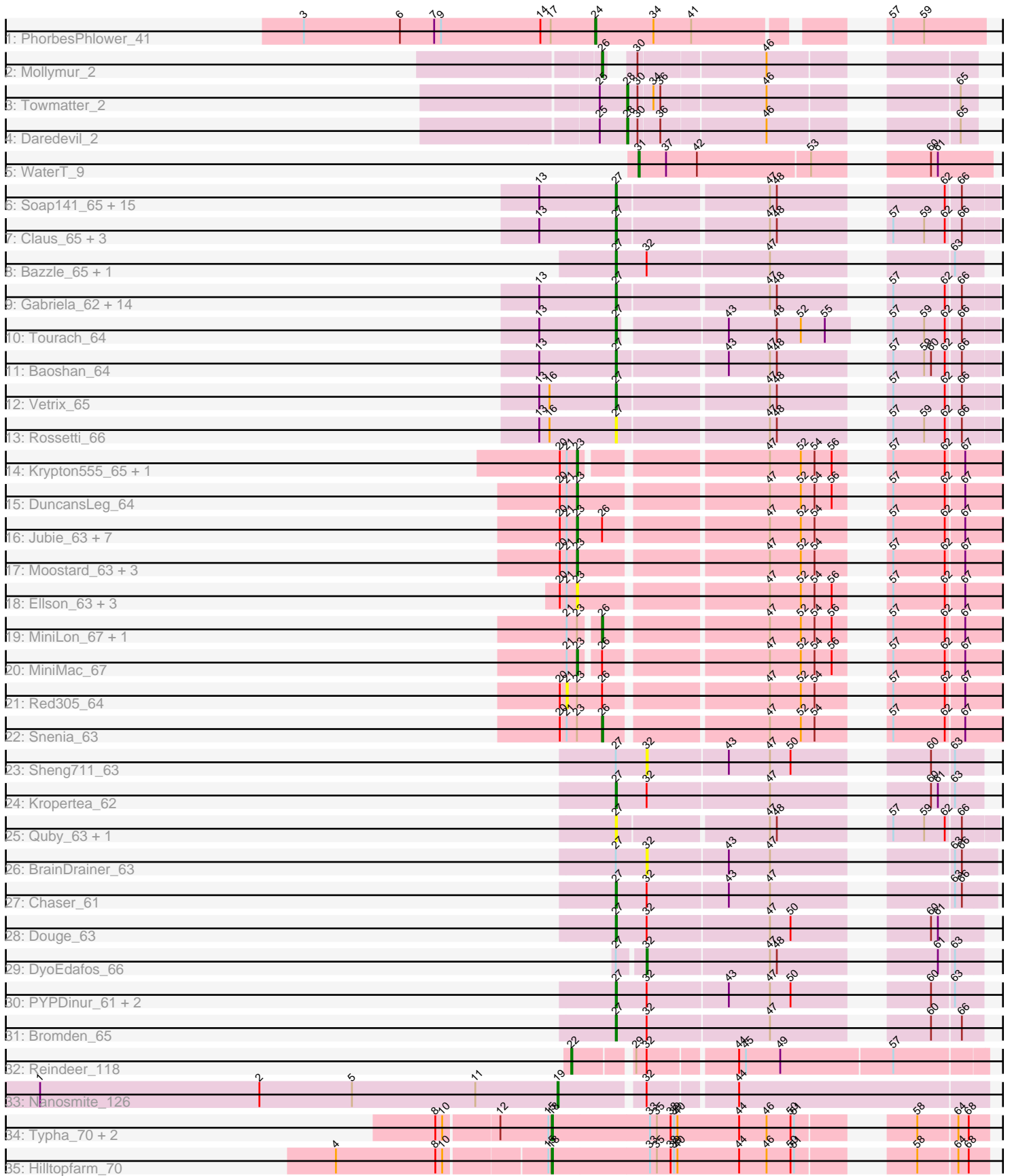


Pham 308434



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 308434 Report

This analysis was run 06/27/26 on database version 652.

Pham number 308434 has 88 members, 20 are drafts.

Phages represented in each track:

- Track 1 : PhorbesPhlower_41
- Track 2 : Mollymur_2
- Track 3 : Towmatter_2
- Track 4 : Daredevil_2
- Track 5 : WaterT_9
- Track 6 : Soap141_65, Faith1_65, Miley16_65, Wigglewiggle_65, Breezona_65, DrSeegs_65, BobsGarage_65, BigCheese_65, MkaliMitinis3_66, OverPar_66, Sarshaun_65, SoJulia_67, Itos_64, Netyap_66, Loadrie_64, Winky_65
- Track 7 : Claus_65, ZhongYanYuan_63, DanBing_65, DHan_66
- Track 8 : Bazzle_65, Archie_65
- Track 9 : Gabriela_62, Zakai_66, Lewan_66, Finemlucis_65, Lynnae_66, Nicholasp3_65, Gardann_66, Crossroads_65, Underpass_56, LilDestine_65, Rumpelstiltskin_64, GuuelaD_64, Wilder_66, Kahlid_65, Hafay_66
- Track 10 : Tourach_64
- Track 11 : Baoshan_64
- Track 12 : Vetrix_65
- Track 13 : Rossetti_66
- Track 14 : Krypton555_65, Whirlwind_64
- Track 15 : DuncansLeg_64
- Track 16 : Jubie_63, Clautastrophe_63, Kingsolomon_63, TriFive_65, Lumos_65, MsGreen_64, Jobypre_64, Nicholas_63
- Track 17 : Moostard_63, Bellis_64, Samty_64, Finnry_64
- Track 18 : Ellson_63, KirDoubleO7_62, BourbonZero_64, LiyuLake_63
- Track 19 : MiniLon_67, Lolly9_63
- Track 20 : MiniMac_67
- Track 21 : Red305_64
- Track 22 : Snenia_63
- Track 23 : Sheng711_63
- Track 24 : Kropertea_62
- Track 25 : Quby_63, FarmResident_65
- Track 26 : BrainDrainer_63
- Track 27 : Chaser_61
- Track 28 : Douge_63
- Track 29 : DyoEdafos_66
- Track 30 : PYPDinur_61, ChutneyChips_63, Douzhi_63
- Track 31 : Bromden_65
- Track 32 : Reindeer_118

- Track 33 : Nanosmite_126
- Track 34 : Typha_70, Faiyaz_71, AuntGwenStacy_71
- Track 35 : Hilltopfarm_70

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

The start number called the most often in the published annotations is 27, it was called in 37 of the 68 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Archie_65, Baoshan_64, Bazzle_65, BigCheese_65, BobsGarage_65, Breezona_65, Bromden_65, Chaser_61, ChutneyChips_63, Claus_65, Crossroads_65, DHan_66, DanBing_65, Douge_63, Douzhi_63, DrSeegs_65, Faith1_65, FarmResident_65, Finemlucis_65, Gabriela_62, Gardann_66, GuuelaD_64, Hafay_66, Itos_64, Kahlid_65, Kropertea_62, Lewan_66, LilDestine_65, Loadrie_64, Lynnae_66, Miley16_65, MkaliMitinis3_66, Netyap_66, Nicholasp3_65, OverPar_66, PYPDinur_61, Quby_63, Rossetti_66, Rumpelstiltskin_64, Sarshaun_65, SoJulia_67, Soap141_65, Tourach_64, Underpass_56, Vetrix_65, Wigglewiggles_65, Wilder_66, Winky_65, Zakai_66, ZhongYanYuan_63,

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

- BrainDrainer_63, DyoEdafos_66, Sheng711_63,

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

- AuntGwenStacy_71, Bellis_64, BourbonZero_64, Clautastrophe_63, Daredevil_2, DuncansLeg_64, Ellson_63, Faiyaz_71, Finnry_64, Hilltopfarm_70, Jobypre_64, Jubie_63, Kingsolomon_63, KirDoubleO7_62, Krypton555_65, LiyuLake_63, Lolly9_63, Lumos_65, MiniLon_67, MiniMac_67, Mollymur_2, Moostard_63, MsGreen_64, Nanosmite_126, Nicholas_63, PhorbesPhlower_41, Red305_64, Reindeer_118, Samty_64, Snenia_63, Towmatter_2, TriFive_65, Typha_70, WaterT_9, Whirlwind_64,

Summary by start number:

Start 18:

- Found in 4 of 88 (4.5%) of genes in pham
- Manual Annotations of this start: 4 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AuntGwenStacy_71 (Y), Faiyaz_71 (Y), Hilltopfarm_70 (Y), Typha_70 (Y),

Start 19:

- Found in 1 of 88 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nanosmite_126 (M3),

Start 21:

- Found in 24 of 88 (27.3%) of genes in pham
- No Manual Annotations of this start.

- Called 4.2% of time when present
- Phage (with cluster) where this start called: Red305_64 (L3),

Start 22:

- Found in 1 of 88 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Reindeer_118 (M1),

Start 23:

- Found in 24 of 88 (27.3%) of genes in pham
- Manual Annotations of this start: 16 of 68
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Bellis_64 (L3), BourbonZero_64 (L3), Clautastrophe_63 (L3), DuncansLeg_64 (L3), Ellson_63 (L3), Finnry_64 (L3), Jobypre_64 (L3), Jubie_63 (L3), Kingsolomon_63 (L3), KirDoubleO7_62 (L3), Krypton555_65 (L3), LiyuLake_63 (L3), Lumos_65 (L3), MiniMac_67 (L3), Moostard_63 (L3), MsGreen_64 (L3), Nicholas_63 (L3), Samty_64 (L3), TriFive_65 (L3), Whirlwind_64 (L3),

Start 24:

- Found in 1 of 88 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PhorbesPhlower_41 (DH),

Start 26:

- Found in 14 of 88 (15.9%) of genes in pham
- Manual Annotations of this start: 4 of 68
- Called 28.6% of time when present
- Phage (with cluster) where this start called: Lolly9_63 (L3), MiniLon_67 (L3), Mollymur_2 (DL), Snenia_63 (L3),

Start 27:

- Found in 53 of 88 (60.2%) of genes in pham
- Manual Annotations of this start: 37 of 68
- Called 94.3% of time when present
- Phage (with cluster) where this start called: Archie_65 (L2), Baoshan_64 (L2), Bazzle_65 (L2), BigCheese_65 (L2), BobsGarage_65 (L2), Breezona_65 (L2), Bromden_65 (L4), Chaser_61 (L4), ChutneyChips_63 (L4), Claus_65 (L2), Crossroads_65 (L2), DHan_66 (L2), DanBing_65 (L2), Douge_63 (L4), Douzhi_63 (L4), DrSeegs_65 (L2), Faith1_65 (L2), FarmResident_65 (L4), Finemlucis_65 (L2), Gabriela_62 (L2), Gardann_66 (L2), GuuelaD_64 (L2), Hafay_66 (L2), Itos_64 (L2), Kahlid_65 (L2), Kropertea_62 (L4), Lewan_66 (L2), LilDestine_65 (L2), Loadrie_64 (L2), Lynnae_66 (L2), Miley16_65 (L2), MkaliMitinis3_66 (L2), Netyap_66 (L2), Nicholasp3_65 (L2), OverPar_66 (L2), PYPDinur_61 (L4), Quby_63 (L4), Rossetti_66 (L2), Rumpelstiltskin_64 (L2), Sarshaun_65 (L2), SoJulia_67 (L2), Soap141_65 (L2), Tourach_64 (L2), Underpass_56 (L2), Vetrix_65 (L2), Wigglewiggle_65 (L2), Wilder_66 (L2), Winky_65 (L2), Zakai_66 (L2), ZhongYanYuan_63 (L2),

Start 28:

- Found in 2 of 88 (2.3%) of genes in pham
- Manual Annotations of this start: 2 of 68

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Daredevil_2 (DL), Towmatter_2 (DL),

Start 31:

- Found in 1 of 88 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: WaterT_9 (GB),

Start 32:

- Found in 14 of 88 (15.9%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 21.4% of time when present
- Phage (with cluster) where this start called: BrainDrainer_63 (L4), DyoEdafos_66 (L4), Sheng711_63 (L4),

Summary by clusters:

There are 9 clusters represented in this pham: DL, DH, L4, M1, L3, M3, Y, L2, GB,

Info for manual annotations of cluster DH:

- Start number 24 was manually annotated 1 time for cluster DH.

Info for manual annotations of cluster DL:

- Start number 26 was manually annotated 1 time for cluster DL.
- Start number 28 was manually annotated 2 times for cluster DL.

Info for manual annotations of cluster GB:

- Start number 31 was manually annotated 1 time for cluster GB.

Info for manual annotations of cluster L2:

- Start number 27 was manually annotated 32 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 23 was manually annotated 16 times for cluster L3.
- Start number 26 was manually annotated 3 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 27 was manually annotated 5 times for cluster L4.
- Start number 32 was manually annotated 1 time for cluster L4.

Info for manual annotations of cluster M1:

- Start number 22 was manually annotated 1 time for cluster M1.

Info for manual annotations of cluster M3:

- Start number 19 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster Y:

- Start number 18 was manually annotated 4 times for cluster Y.

Gene Information:

Gene: Archie_65 Start: 45917, Stop: 46195, Start Num: 27
Candidate Starts for Archie_65:
(Start: 27 @45917 has 37 MA's), (Start: 32 @45944 has 1 MA's), (47, 46049), (63, 46172),

Gene: AuntGwenStacy_71 Start: 48982, Stop: 49320, Start Num: 18
Candidate Starts for AuntGwenStacy_71:
(8, 48886), (10, 48892), (12, 48937), (15, 48979), (Start: 18 @48982 has 4 MA's), (33, 49066), (35, 49072), (38, 49084), (39, 49087), (40, 49090), (44, 49144), (46, 49168), (50, 49189), (51, 49192), (58, 49261), (64, 49294), (68, 49303),

Gene: Baoshan_64 Start: 45619, Stop: 45903, Start Num: 27
Candidate Starts for Baoshan_64:
(13, 45553), (Start: 27 @45619 has 37 MA's), (43, 45709), (47, 45745), (48, 45751), (57, 45817), (59, 45844), (60, 45850), (62, 45862), (66, 45874),

Gene: Bazzle_65 Start: 45987, Stop: 46265, Start Num: 27
Candidate Starts for Bazzle_65:
(Start: 27 @45987 has 37 MA's), (Start: 32 @46014 has 1 MA's), (47, 46119), (63, 46242),

Gene: Bellis_64 Start: 45802, Stop: 46119, Start Num: 23
Candidate Starts for Bellis_64:
(20, 45787), (21, 45793), (Start: 23 @45802 has 16 MA's), (47, 45955), (52, 45982), (54, 45994), (57, 46027), (62, 46072), (67, 46087),

Gene: BigCheese_65 Start: 45676, Stop: 45960, Start Num: 27
Candidate Starts for BigCheese_65:
(13, 45610), (Start: 27 @45676 has 37 MA's), (47, 45802), (48, 45808), (62, 45919), (66, 45931),

Gene: BobsGarage_65 Start: 45676, Stop: 45960, Start Num: 27
Candidate Starts for BobsGarage_65:
(13, 45610), (Start: 27 @45676 has 37 MA's), (47, 45802), (48, 45808), (62, 45919), (66, 45931),

Gene: BourbonZero_64 Start: 45847, Stop: 46164, Start Num: 23
Candidate Starts for BourbonZero_64:
(20, 45832), (21, 45838), (Start: 23 @45847 has 16 MA's), (47, 46000), (52, 46027), (54, 46039), (56, 46054), (57, 46072), (62, 46117), (67, 46132),

Gene: BrainDrainer_63 Start: 44572, Stop: 44835, Start Num: 32
Candidate Starts for BrainDrainer_63:
(Start: 27 @44545 has 37 MA's), (Start: 32 @44572 has 1 MA's), (43, 44641), (47, 44677), (63, 44800), (66, 44806),

Gene: Breezona_65 Start: 45676, Stop: 45960, Start Num: 27
Candidate Starts for Breezona_65:
(13, 45610), (Start: 27 @45676 has 37 MA's), (47, 45802), (48, 45808), (62, 45919), (66, 45931),

Gene: Bromden_65 Start: 45655, Stop: 45933, Start Num: 27
Candidate Starts for Bromden_65:
(Start: 27 @45655 has 37 MA's), (Start: 32 @45682 has 1 MA's), (47, 45787), (60, 45892), (66, 45916),

Gene: Chaser_61 Start: 44317, Stop: 44607, Start Num: 27
Candidate Starts for Chaser_61:

(Start: 27 @44317 has 37 MA's), (Start: 32 @44344 has 1 MA's), (43, 44413), (47, 44449), (63, 44572), (66, 44578),

Gene: ChutneyChips_63 Start: 44581, Stop: 44859, Start Num: 27

Candidate Starts for ChutneyChips_63:

(Start: 27 @44581 has 37 MA's), (Start: 32 @44608 has 1 MA's), (43, 44677), (47, 44713), (50, 44731), (60, 44818), (63, 44836),

Gene: Claus_65 Start: 45757, Stop: 46041, Start Num: 27

Candidate Starts for Claus_65:

(13, 45691), (Start: 27 @45757 has 37 MA's), (47, 45883), (48, 45889), (57, 45955), (59, 45982), (62, 46000), (66, 46012),

Gene: Clautastrophe_63 Start: 45799, Stop: 46116, Start Num: 23

Candidate Starts for Clautastrophe_63:

(20, 45784), (21, 45790), (Start: 23 @45799 has 16 MA's), (Start: 26 @45820 has 4 MA's), (47, 45952), (52, 45979), (54, 45991), (57, 46024), (62, 46069), (67, 46084),

Gene: Crossroads_65 Start: 45754, Stop: 46038, Start Num: 27

Candidate Starts for Crossroads_65:

(13, 45688), (Start: 27 @45754 has 37 MA's), (47, 45880), (48, 45886), (57, 45952), (62, 45997), (66, 46009),

Gene: DHan_66 Start: 45657, Stop: 45941, Start Num: 27

Candidate Starts for DHan_66:

(13, 45591), (Start: 27 @45657 has 37 MA's), (47, 45783), (48, 45789), (57, 45855), (59, 45882), (62, 45900), (66, 45912),

Gene: DanBing_65 Start: 45626, Stop: 45910, Start Num: 27

Candidate Starts for DanBing_65:

(13, 45560), (Start: 27 @45626 has 37 MA's), (47, 45752), (48, 45758), (57, 45824), (59, 45851), (62, 45869), (66, 45881),

Gene: Daredevil_2 Start: 535, Stop: 789, Start Num: 28

Candidate Starts for Daredevil_2:

(25, 511), (Start: 28 @535 has 2 MA's), (30, 544), (36, 562), (46, 649), (65, 775),

Gene: Douge_63 Start: 44323, Stop: 44601, Start Num: 27

Candidate Starts for Douge_63:

(Start: 27 @44323 has 37 MA's), (Start: 32 @44350 has 1 MA's), (47, 44455), (50, 44473), (60, 44560), (61, 44566),

Gene: Douzhi_63 Start: 44376, Stop: 44654, Start Num: 27

Candidate Starts for Douzhi_63:

(Start: 27 @44376 has 37 MA's), (Start: 32 @44403 has 1 MA's), (43, 44472), (47, 44508), (50, 44526), (60, 44613), (63, 44631),

Gene: DrSeegs_65 Start: 45676, Stop: 45960, Start Num: 27

Candidate Starts for DrSeegs_65:

(13, 45610), (Start: 27 @45676 has 37 MA's), (47, 45802), (48, 45808), (62, 45919), (66, 45931),

Gene: DuncansLeg_64 Start: 45835, Stop: 46152, Start Num: 23

Candidate Starts for DuncansLeg_64:

(20, 45820), (21, 45826), (Start: 23 @45835 has 16 MA's), (47, 45988), (52, 46015), (54, 46027), (56, 46042), (57, 46060), (62, 46105), (67, 46120),

Gene: DyoEdafos_66 Start: 44844, Stop: 45095, Start Num: 32

Candidate Starts for DyoEdafos_66:

(Start: 27 @44823 has 37 MA's), (Start: 32 @44844 has 1 MA's), (47, 44949), (48, 44955), (61, 45060), (63, 45072),

Gene: Ellson_63 Start: 45863, Stop: 46180, Start Num: 23

Candidate Starts for Ellson_63:

(20, 45848), (21, 45854), (Start: 23 @45863 has 16 MA's), (47, 46016), (52, 46043), (54, 46055), (56, 46070), (57, 46088), (62, 46133), (67, 46148),

Gene: Faith1_65 Start: 45676, Stop: 45960, Start Num: 27

Candidate Starts for Faith1_65:

(13, 45610), (Start: 27 @45676 has 37 MA's), (47, 45802), (48, 45808), (62, 45919), (66, 45931),

Gene: Faiyaz_71 Start: 48988, Stop: 49326, Start Num: 18

Candidate Starts for Faiyaz_71:

(8, 48892), (10, 48898), (12, 48943), (15, 48985), (Start: 18 @48988 has 4 MA's), (33, 49072), (35, 49078), (38, 49090), (39, 49093), (40, 49096), (44, 49150), (46, 49174), (50, 49195), (51, 49198), (58, 49267), (64, 49300), (68, 49309),

Gene: FarmResident_65 Start: 44339, Stop: 44623, Start Num: 27

Candidate Starts for FarmResident_65:

(Start: 27 @44339 has 37 MA's), (47, 44465), (48, 44471), (57, 44537), (59, 44564), (62, 44582), (66, 44594),

Gene: Finemlucis_65 Start: 45997, Stop: 46281, Start Num: 27

Candidate Starts for Finemlucis_65:

(13, 45931), (Start: 27 @45997 has 37 MA's), (47, 46123), (48, 46129), (57, 46195), (62, 46240), (66, 46252),

Gene: Finnry_64 Start: 46063, Stop: 46380, Start Num: 23

Candidate Starts for Finnry_64:

(20, 46048), (21, 46054), (Start: 23 @46063 has 16 MA's), (47, 46216), (52, 46243), (54, 46255), (57, 46288), (62, 46333), (67, 46348),

Gene: Gabriela_62 Start: 44126, Stop: 44410, Start Num: 27

Candidate Starts for Gabriela_62:

(13, 44060), (Start: 27 @44126 has 37 MA's), (47, 44252), (48, 44258), (57, 44324), (62, 44369), (66, 44381),

Gene: Gardann_66 Start: 45712, Stop: 45996, Start Num: 27

Candidate Starts for Gardann_66:

(13, 45646), (Start: 27 @45712 has 37 MA's), (47, 45838), (48, 45844), (57, 45910), (62, 45955), (66, 45967),

Gene: GuuelaD_64 Start: 45791, Stop: 46075, Start Num: 27

Candidate Starts for GuuelaD_64:

(13, 45725), (Start: 27 @45791 has 37 MA's), (47, 45917), (48, 45923), (57, 45989), (62, 46034), (66, 46046),

Gene: Hafay_66 Start: 45780, Stop: 46064, Start Num: 27

Candidate Starts for Hafay_66:

(13, 45714), (Start: 27 @45780 has 37 MA's), (47, 45906), (48, 45912), (57, 45978), (62, 46023), (66, 46035),

Gene: Hilltopfarm_70 Start: 48688, Stop: 49026, Start Num: 18

Candidate Starts for Hilltopfarm_70:

(4, 48508), (8, 48595), (10, 48601), (15, 48685), (Start: 18 @48688 has 4 MA's), (33, 48772), (35, 48778), (38, 48790), (39, 48793), (40, 48796), (44, 48850), (46, 48874), (50, 48895), (51, 48898), (58, 48967), (64, 49000), (68, 49009),

Gene: Itos_64 Start: 44582, Stop: 44866, Start Num: 27

Candidate Starts for Itos_64:

(13, 44516), (Start: 27 @44582 has 37 MA's), (47, 44708), (48, 44714), (62, 44825), (66, 44837),

Gene: Jobypre_64 Start: 45799, Stop: 46116, Start Num: 23

Candidate Starts for Jobypre_64:

(20, 45784), (21, 45790), (Start: 23 @45799 has 16 MA's), (Start: 26 @45820 has 4 MA's), (47, 45952), (52, 45979), (54, 45991), (57, 46024), (62, 46069), (67, 46084),

Gene: Jubie_63 Start: 45934, Stop: 46251, Start Num: 23

Candidate Starts for Jubie_63:

(20, 45919), (21, 45925), (Start: 23 @45934 has 16 MA's), (Start: 26 @45955 has 4 MA's), (47, 46087), (52, 46114), (54, 46126), (57, 46159), (62, 46204), (67, 46219),

Gene: Kahlid_65 Start: 45682, Stop: 45966, Start Num: 27

Candidate Starts for Kahlid_65:

(13, 45616), (Start: 27 @45682 has 37 MA's), (47, 45808), (48, 45814), (57, 45880), (62, 45925), (66, 45937),

Gene: Kingsolomon_63 Start: 45806, Stop: 46123, Start Num: 23

Candidate Starts for Kingsolomon_63:

(20, 45791), (21, 45797), (Start: 23 @45806 has 16 MA's), (Start: 26 @45827 has 4 MA's), (47, 45959), (52, 45986), (54, 45998), (57, 46031), (62, 46076), (67, 46091),

Gene: KirDoubleO7_62 Start: 45837, Stop: 46154, Start Num: 23

Candidate Starts for KirDoubleO7_62:

(20, 45822), (21, 45828), (Start: 23 @45837 has 16 MA's), (47, 45990), (52, 46017), (54, 46029), (56, 46044), (57, 46062), (62, 46107), (67, 46122),

Gene: Kropertea_62 Start: 44483, Stop: 44761, Start Num: 27

Candidate Starts for Kropertea_62:

(Start: 27 @44483 has 37 MA's), (Start: 32 @44510 has 1 MA's), (47, 44615), (60, 44720), (61, 44726), (63, 44738),

Gene: Krypton555_65 Start: 46031, Stop: 46342, Start Num: 23

Candidate Starts for Krypton555_65:

(20, 46016), (21, 46022), (Start: 23 @46031 has 16 MA's), (47, 46178), (52, 46205), (54, 46217), (56, 46232), (57, 46250), (62, 46295), (67, 46310),

Gene: Lewan_66 Start: 45736, Stop: 46020, Start Num: 27

Candidate Starts for Lewan_66:

(13, 45670), (Start: 27 @45736 has 37 MA's), (47, 45862), (48, 45868), (57, 45934), (62, 45979), (66, 45991),

Gene: LilDestine_65 Start: 45709, Stop: 45993, Start Num: 27

Candidate Starts for LilDestine_65:

(13, 45643), (Start: 27 @45709 has 37 MA's), (47, 45835), (48, 45841), (57, 45907), (62, 45952), (66, 45964),

Gene: LiyuLake_63 Start: 45853, Stop: 46170, Start Num: 23

Candidate Starts for LiyuLake_63:

(20, 45838), (21, 45844), (Start: 23 @45853 has 16 MA's), (47, 46006), (52, 46033), (54, 46045), (56, 46060), (57, 46078), (62, 46123), (67, 46138),

Gene: Loadrie_64 Start: 45764, Stop: 46048, Start Num: 27

Candidate Starts for Loadrie_64:

(13, 45698), (Start: 27 @45764 has 37 MA's), (47, 45890), (48, 45896), (62, 46007), (66, 46019),

Gene: Lolly9_63 Start: 45642, Stop: 45935, Start Num: 26

Candidate Starts for Lolly9_63:

(21, 45618), (Start: 23 @45627 has 16 MA's), (Start: 26 @45642 has 4 MA's), (47, 45774), (52, 45801), (54, 45813), (56, 45828), (57, 45846), (62, 45891), (67, 45906),

Gene: Lumos_65 Start: 45796, Stop: 46113, Start Num: 23

Candidate Starts for Lumos_65:

(20, 45781), (21, 45787), (Start: 23 @45796 has 16 MA's), (Start: 26 @45817 has 4 MA's), (47, 45949), (52, 45976), (54, 45988), (57, 46021), (62, 46066), (67, 46081),

Gene: Lynnae_66 Start: 45707, Stop: 45991, Start Num: 27

Candidate Starts for Lynnae_66:

(13, 45641), (Start: 27 @45707 has 37 MA's), (47, 45833), (48, 45839), (57, 45905), (62, 45950), (66, 45962),

Gene: Miley16_65 Start: 45676, Stop: 45960, Start Num: 27

Candidate Starts for Miley16_65:

(13, 45610), (Start: 27 @45676 has 37 MA's), (47, 45802), (48, 45808), (62, 45919), (66, 45931),

Gene: MiniLon_67 Start: 45643, Stop: 45936, Start Num: 26

Candidate Starts for MiniLon_67:

(21, 45619), (Start: 23 @45628 has 16 MA's), (Start: 26 @45643 has 4 MA's), (47, 45775), (52, 45802), (54, 45814), (56, 45829), (57, 45847), (62, 45892), (67, 45907),

Gene: MiniMac_67 Start: 45626, Stop: 45934, Start Num: 23

Candidate Starts for MiniMac_67:

(21, 45617), (Start: 23 @45626 has 16 MA's), (Start: 26 @45641 has 4 MA's), (47, 45773), (52, 45800), (54, 45812), (56, 45827), (57, 45845), (62, 45890), (67, 45905),

Gene: MkaliMitinis3_66 Start: 45748, Stop: 46032, Start Num: 27

Candidate Starts for MkaliMitinis3_66:

(13, 45682), (Start: 27 @45748 has 37 MA's), (47, 45874), (48, 45880), (62, 45991), (66, 46003),

Gene: Mollymur_2 Start: 508, Stop: 765, Start Num: 26

Candidate Starts for Mollymur_2:

(Start: 26 @508 has 4 MA's), (30, 520), (46, 625),

Gene: Moostard_63 Start: 45802, Stop: 46119, Start Num: 23

Candidate Starts for Moostard_63:

(20, 45787), (21, 45793), (Start: 23 @45802 has 16 MA's), (47, 45955), (52, 45982), (54, 45994), (57, 46027), (62, 46072), (67, 46087),

Gene: MsGreen_64 Start: 45799, Stop: 46116, Start Num: 23

Candidate Starts for MsGreen_64:

(20, 45784), (21, 45790), (Start: 23 @45799 has 16 MA's), (Start: 26 @45820 has 4 MA's), (47, 45952), (52, 45979), (54, 45991), (57, 46024), (62, 46069), (67, 46084),

Gene: Nanosmite_126 Start: 64054, Stop: 64410, Start Num: 19

Candidate Starts for Nanosmite_126:

(1, 63601), (2, 63793), (5, 63874), (11, 63982), (Start: 19 @64054 has 1 MA's), (Start: 32 @64123 has 1 MA's), (44, 64195),

Gene: Netyap_66 Start: 45677, Stop: 45961, Start Num: 27

Candidate Starts for Netyap_66:

(13, 45611), (Start: 27 @45677 has 37 MA's), (47, 45803), (48, 45809), (62, 45920), (66, 45932),

Gene: Nicholas_63 Start: 45806, Stop: 46123, Start Num: 23

Candidate Starts for Nicholas_63:

(20, 45791), (21, 45797), (Start: 23 @45806 has 16 MA's), (Start: 26 @45827 has 4 MA's), (47, 45959), (52, 45986), (54, 45998), (57, 46031), (62, 46076), (67, 46091),

Gene: Nicholasp3_65 Start: 45712, Stop: 45996, Start Num: 27

Candidate Starts for Nicholasp3_65:

(13, 45646), (Start: 27 @45712 has 37 MA's), (47, 45838), (48, 45844), (57, 45910), (62, 45955), (66, 45967),

Gene: OverPar_66 Start: 45764, Stop: 46048, Start Num: 27

Candidate Starts for OverPar_66:

(13, 45698), (Start: 27 @45764 has 37 MA's), (47, 45890), (48, 45896), (62, 46007), (66, 46019),

Gene: PYPDinur_61 Start: 44406, Stop: 44684, Start Num: 27

Candidate Starts for PYPDinur_61:

(Start: 27 @44406 has 37 MA's), (Start: 32 @44433 has 1 MA's), (43, 44502), (47, 44538), (50, 44556), (60, 44643), (63, 44661),

Gene: PhorbesPhlower_41 Start: 29420, Stop: 29707, Start Num: 24

Candidate Starts for PhorbesPhlower_41:

(3, 29165), (6, 29249), (7, 29279), (9, 29285), (14, 29372), (17, 29381), (Start: 24 @29420 has 1 MA's), (34, 29471), (41, 29504), (57, 29627), (59, 29654),

Gene: Quby_63 Start: 44304, Stop: 44588, Start Num: 27

Candidate Starts for Quby_63:

(Start: 27 @44304 has 37 MA's), (47, 44430), (48, 44436), (57, 44502), (59, 44529), (62, 44547), (66, 44559),

Gene: Red305_64 Start: 45790, Stop: 46116, Start Num: 21

Candidate Starts for Red305_64:

(20, 45784), (21, 45790), (Start: 23 @45799 has 16 MA's), (Start: 26 @45820 has 4 MA's), (47, 45952), (52, 45979), (54, 45991), (57, 46024), (62, 46069), (67, 46084),

Gene: Reindeer_118 Start: 63315, Stop: 63650, Start Num: 22

Candidate Starts for Reindeer_118:

(Start: 22 @63315 has 1 MA's), (29, 63360), (Start: 32 @63369 has 1 MA's), (44, 63441), (45, 63447), (49, 63477), (57, 63573),

Gene: Rossetti_66 Start: 46258, Stop: 46542, Start Num: 27

Candidate Starts for Rossetti_66:

(13, 46192), (16, 46201), (Start: 27 @46258 has 37 MA's), (47, 46384), (48, 46390), (57, 46456), (59, 46483), (62, 46501), (66, 46513),

Gene: Rumpelstiltskin_64 Start: 45105, Stop: 45389, Start Num: 27

Candidate Starts for Rumpelstiltskin_64:

(13, 45039), (Start: 27 @45105 has 37 MA's), (47, 45231), (48, 45237), (57, 45303), (62, 45348), (66, 45360),

Gene: Samty_64 Start: 45807, Stop: 46124, Start Num: 23

Candidate Starts for Samty_64:

(20, 45792), (21, 45798), (Start: 23 @45807 has 16 MA's), (47, 45960), (52, 45987), (54, 45999), (57, 46032), (62, 46077), (67, 46092),

Gene: Sarshaun_65 Start: 45772, Stop: 46056, Start Num: 27

Candidate Starts for Sarshaun_65:

(13, 45706), (Start: 27 @45772 has 37 MA's), (47, 45898), (48, 45904), (62, 46015), (66, 46027),

Gene: Sheng711_63 Start: 44410, Stop: 44661, Start Num: 32

Candidate Starts for Sheng711_63:

(Start: 27 @44383 has 37 MA's), (Start: 32 @44410 has 1 MA's), (43, 44479), (47, 44515), (50, 44533), (60, 44620), (63, 44638),

Gene: Snenia_63 Start: 45821, Stop: 46117, Start Num: 26

Candidate Starts for Snenia_63:

(20, 45785), (21, 45791), (Start: 23 @45800 has 16 MA's), (Start: 26 @45821 has 4 MA's), (47, 45953), (52, 45980), (54, 45992), (57, 46025), (62, 46070), (67, 46085),

Gene: SoJulia_67 Start: 45941, Stop: 46225, Start Num: 27

Candidate Starts for SoJulia_67:

(13, 45875), (Start: 27 @45941 has 37 MA's), (47, 46067), (48, 46073), (62, 46184), (66, 46196),

Gene: Soap141_65 Start: 45772, Stop: 46056, Start Num: 27

Candidate Starts for Soap141_65:

(13, 45706), (Start: 27 @45772 has 37 MA's), (47, 45898), (48, 45904), (62, 46015), (66, 46027),

Gene: Tourach_64 Start: 45761, Stop: 46042, Start Num: 27

Candidate Starts for Tourach_64:

(13, 45695), (Start: 27 @45761 has 37 MA's), (43, 45845), (48, 45887), (52, 45908), (55, 45929), (57, 45956), (59, 45983), (62, 46001), (66, 46013),

Gene: Towmatter_2 Start: 534, Stop: 788, Start Num: 28

Candidate Starts for Towmatter_2:

(25, 510), (Start: 28 @534 has 2 MA's), (30, 543), (34, 555), (36, 561), (46, 648), (65, 774),

Gene: TriFive_65 Start: 45799, Stop: 46116, Start Num: 23

Candidate Starts for TriFive_65:

(20, 45784), (21, 45790), (Start: 23 @45799 has 16 MA's), (Start: 26 @45820 has 4 MA's), (47, 45952), (52, 45979), (54, 45991), (57, 46024), (62, 46069), (67, 46084),

Gene: Typha_70 Start: 48982, Stop: 49320, Start Num: 18

Candidate Starts for Typha_70:

(8, 48886), (10, 48892), (12, 48937), (15, 48979), (Start: 18 @48982 has 4 MA's), (33, 49066), (35, 49072), (38, 49084), (39, 49087), (40, 49090), (44, 49144), (46, 49168), (50, 49189), (51, 49192), (58, 49261), (64, 49294), (68, 49303),

Gene: Underpass_56 Start: 40748, Stop: 41032, Start Num: 27

Candidate Starts for Underpass_56:

(13, 40682), (Start: 27 @40748 has 37 MA's), (47, 40874), (48, 40880), (57, 40946), (62, 40991), (66, 41003),

Gene: Vetric_65 Start: 45716, Stop: 46000, Start Num: 27

Candidate Starts for Vetric_65:

(13, 45650), (16, 45659), (Start: 27 @45716 has 37 MA's), (47, 45842), (48, 45848), (57, 45914), (62, 45959), (66, 45971),

Gene: WaterT_9 Start: 2429, Stop: 2698, Start Num: 31

Candidate Starts for WaterT_9:

(Start: 31 @2429 has 1 MA's), (37, 2453), (42, 2480), (53, 2576), (60, 2645), (61, 2651),

Gene: Whirlwind_64 Start: 45621, Stop: 45932, Start Num: 23

Candidate Starts for Whirlwind_64:

(20, 45606), (21, 45612), (Start: 23 @45621 has 16 MA's), (47, 45768), (52, 45795), (54, 45807), (56, 45822), (57, 45840), (62, 45885), (67, 45900),

Gene: Wigglewigg_65 Start: 45736, Stop: 46020, Start Num: 27

Candidate Starts for Wigglewigg_65:

(13, 45670), (Start: 27 @45736 has 37 MA's), (47, 45862), (48, 45868), (62, 45979), (66, 45991),

Gene: Wilder_66 Start: 45682, Stop: 45966, Start Num: 27

Candidate Starts for Wilder_66:

(13, 45616), (Start: 27 @45682 has 37 MA's), (47, 45808), (48, 45814), (57, 45880), (62, 45925), (66, 45937),

Gene: Winky_65 Start: 45676, Stop: 45960, Start Num: 27

Candidate Starts for Winky_65:

(13, 45610), (Start: 27 @45676 has 37 MA's), (47, 45802), (48, 45808), (62, 45919), (66, 45931),

Gene: Zakai_66 Start: 46002, Stop: 46286, Start Num: 27

Candidate Starts for Zakai_66:

(13, 45936), (Start: 27 @46002 has 37 MA's), (47, 46128), (48, 46134), (57, 46200), (62, 46245), (66, 46257),

Gene: ZhongYanYuan_63 Start: 45571, Stop: 45855, Start Num: 27

Candidate Starts for ZhongYanYuan_63:

(13, 45505), (Start: 27 @45571 has 37 MA's), (47, 45697), (48, 45703), (57, 45769), (59, 45796), (62, 45814), (66, 45826),