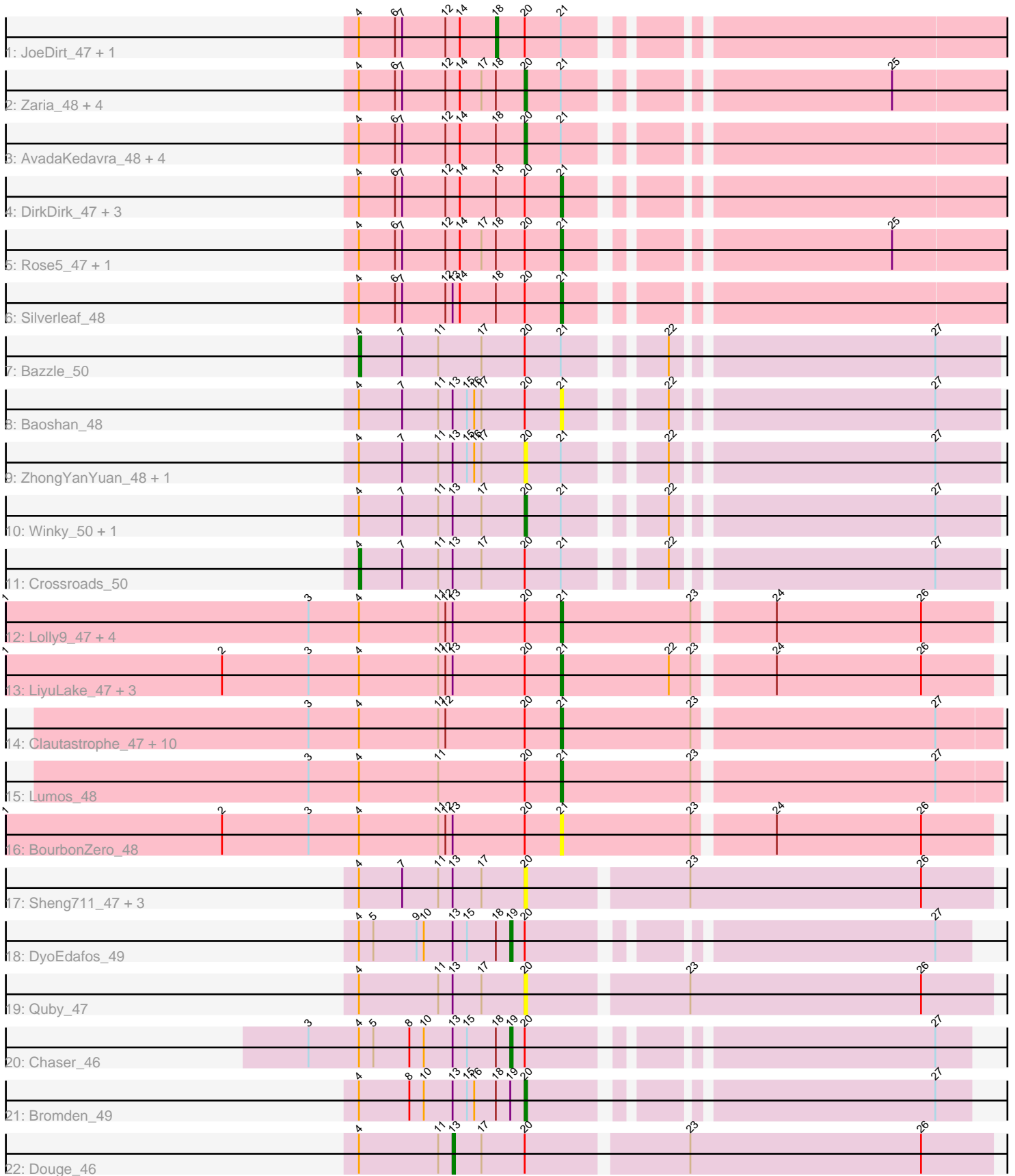


Pham 182296



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 182296 Report

This analysis was run 11/02/24 on database version 579.

Pham number 182296 has 57 members, 14 are drafts.

Phages represented in each track:

- Track 1 : JoeDirt_47, Appletree2_47
- Track 2 : Zaria_48, Acquire49_48, Wyatt2_48, CicholasNage_48, Calm_48
- Track 3 : AvadaKedavra_48, Halena_47, OhShagHennessy_47, UPIE_48, LeBron_48
- Track 4 : DirkDirk_47, Wamburgrxpress_48, MAckerman_48, Enceladus_47
- Track 5 : Rose5_47, Tyson_47
- Track 6 : Silverleaf_48
- Track 7 : Bazzle_50
- Track 8 : Baoshan_48
- Track 9 : ZhongYanYuan_48, DanBing_49
- Track 10 : Winky_50, Breezona_50
- Track 11 : Crossroads_50
- Track 12 : Lolly9_47, MiniLon_49, Whirlwind_48, Krypton555_49, MiniMac_49
- Track 13 : LiyuLake_47, DuncansLeg_47, Ellson_47, KirDoubleO7_46
- Track 14 : Clautastrophe_47, Bellis_47, Snenia_47, Samty_47, Jubie_47, Finnry_47, Kingsolomon_47, Nicholas_47, MsGreen_47, Jobypre_48, Moostard_47
- Track 15 : Lumos_48
- Track 16 : BourbonZero_48
- Track 17 : Sheng711_47, FarmResident_48, PYPDinur_45, Douzhi_47
- Track 18 : DyoEdafos_49
- Track 19 : Quby_47
- Track 20 : Chaser_46
- Track 21 : Bromden_49
- Track 22 : Douge_46

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

The start number called the most often in the published annotations is 21, it was called in 23 of the 43 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Baoshan_48, Bellis_47, BourbonZero_48, Clautastrophe_47, DirkDirk_47, DuncansLeg_47, Ellson_47, Enceladus_47, Finnry_47, Jobypre_48, Jubie_47, Kingsolomon_47, KirDoubleO7_46, Krypton555_49, LiyuLake_47, Lolly9_47,

Lumos_48, MAckerman_48, MiniLon_49, MiniMac_49, Moostard_47, MsGreen_47, Nicholas_47, Rose5_47, Samty_47, Silverleaf_48, Snenia_47, Tyson_47, Wamburgxpress_48, Whirlwind_48,

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

- Acquire49_48, Appletree2_47, AvadaKedavra_48, Bazzle_50, Breezona_50, Calm_48, CicholasNage_48, Crossroads_50, DanBing_49, Halena_47, JoeDirt_47, LeBron_48, OhShagHennessy_47, UPIE_48, Winky_50, Wyatt2_48, Zaria_48, ZhongYanYuan_48,

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

- Bromden_49, Chaser_46, Douge_46, Douzhi_47, DyoEdafos_49, FarmResident_48, PYPDinur_45, Quby_47, Sheng711_47,

Summary by start number:

Start 4:

- Found in 57 of 57 (100.0%) of genes in pham
- Manual Annotations of this start: 2 of 43
- Called 3.5% of time when present
- Phage (with cluster) where this start called: Bazzle_50 (L2), Crossroads_50 (L2),

Start 13:

- Found in 26 of 57 (45.6%) of genes in pham
- Manual Annotations of this start: 1 of 43
- Called 3.8% of time when present
- Phage (with cluster) where this start called: Douge_46 (L4),

Start 18:

- Found in 22 of 57 (38.6%) of genes in pham
- Manual Annotations of this start: 2 of 43
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Appletree2_47 (L1), JoeDirt_47 (L1),

Start 19:

- Found in 3 of 57 (5.3%) of genes in pham
- Manual Annotations of this start: 2 of 43
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Chaser_46 (L4), DyoEdafos_49 (L4),

Start 20:

- Found in 57 of 57 (100.0%) of genes in pham
- Manual Annotations of this start: 13 of 43
- Called 35.1% of time when present
- Phage (with cluster) where this start called: Acquire49_48 (L1), AvadaKedavra_48 (L1), Breezona_50 (L2), Bromden_49 (L4), Calm_48 (L1), CicholasNage_48 (L1), DanBing_49 (L2), Douzhi_47 (L4), FarmResident_48 (L4), Halena_47 (L1), LeBron_48 (L1), OhShagHennessy_47 (L1), PYPDinur_45 (L4), Quby_47 (L4), Sheng711_47 (L4), UPIE_48 (L1), Winky_50 (L2), Wyatt2_48 (L1), Zaria_48 (L1), ZhongYanYuan_48 (L2),

Start 21:

- Found in 48 of 57 (84.2%) of genes in pham

- Manual Annotations of this start: 23 of 43
- Called 62.5% of time when present
- Phage (with cluster) where this start called: Baoshan_48 (L2), Bellis_47 (L3), BourbonZero_48 (L3), Clautastrophe_47 (L3), DirkDirk_47 (L1), DuncansLeg_47 (L3), Ellson_47 (L3), Enceladus_47 (L1), Finnry_47 (L3), Jobypre_48 (L3), Jubie_47 (L3), Kingsolomon_47 (L3), KirDoubleO7_46 (L3), Krypton555_49 (L3), LiyuLake_47 (L3), Lolly9_47 (L3), Lumos_48 (L3), MAckerman_48 (L1), MiniLon_49 (L3), MiniMac_49 (L3), Moostard_47 (L3), MsGreen_47 (L3), Nicholas_47 (L3), Rose5_47 (L1), Samty_47 (L3), Silverleaf_48 (L1), Snenia_47 (L3), Tyson_47 (L1), Wamburgxpress_48 (L1), Whirlwind_48 (L3),

Summary by clusters:

There are 4 clusters represented in this pham: L4, L2, L3, L1,

Info for manual annotations of cluster L1:

- Start number 18 was manually annotated 2 times for cluster L1.
- Start number 20 was manually annotated 10 times for cluster L1.
- Start number 21 was manually annotated 7 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 4 was manually annotated 2 times for cluster L2.
- Start number 20 was manually annotated 2 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 21 was manually annotated 16 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 13 was manually annotated 1 time for cluster L4.
- Start number 19 was manually annotated 2 times for cluster L4.
- Start number 20 was manually annotated 1 time for cluster L4.

Gene Information:

Gene: Acquire49_48 Start: 36657, Stop: 36842, Start Num: 20

Candidate Starts for Acquire49_48:

(Start: 4 @36588 has 2 MA's), (6, 36603), (7, 36606), (12, 36624), (14, 36630), (17, 36639), (Start: 18 @36645 has 2 MA's), (Start: 20 @36657 has 13 MA's), (Start: 21 @36672 has 23 MA's), (25, 36789),

Gene: Appletree2_47 Start: 36575, Stop: 36772, Start Num: 18

Candidate Starts for Appletree2_47:

(Start: 4 @36518 has 2 MA's), (6, 36533), (7, 36536), (12, 36554), (14, 36560), (Start: 18 @36575 has 2 MA's), (Start: 20 @36587 has 13 MA's), (Start: 21 @36602 has 23 MA's),

Gene: AvadaKedavra_48 Start: 36657, Stop: 36842, Start Num: 20

Candidate Starts for AvadaKedavra_48:

(Start: 4 @36588 has 2 MA's), (6, 36603), (7, 36606), (12, 36624), (14, 36630), (Start: 18 @36645 has 2 MA's), (Start: 20 @36657 has 13 MA's), (Start: 21 @36672 has 23 MA's),

Gene: Baoshan_48 Start: 38125, Stop: 38286, Start Num: 21

Candidate Starts for Baoshan_48:

(Start: 4 @38041 has 2 MA's), (7, 38059), (11, 38074), (Start: 13 @38080 has 1 MA's), (15, 38086), (16, 38089), (17, 38092), (Start: 20 @38110 has 13 MA's), (Start: 21 @38125 has 23 MA's), (22, 38158), (27, 38260),

Gene: Bazzle_50 Start: 38384, Stop: 38629, Start Num: 4

Candidate Starts for Bazzle_50:

(Start: 4 @38384 has 2 MA's), (7, 38402), (11, 38417), (17, 38435), (Start: 20 @38453 has 13 MA's), (Start: 21 @38468 has 23 MA's), (22, 38501), (27, 38603),

Gene: Bellis_47 Start: 38334, Stop: 38510, Start Num: 21

Candidate Starts for Bellis_47:

(3, 38229), (Start: 4 @38250 has 2 MA's), (11, 38283), (12, 38286), (Start: 20 @38319 has 13 MA's), (Start: 21 @38334 has 23 MA's), (23, 38388), (27, 38484),

Gene: BourbonZero_48 Start: 38374, Stop: 38547, Start Num: 21

Candidate Starts for BourbonZero_48:

(1, 38143), (2, 38233), (3, 38269), (Start: 4 @38290 has 2 MA's), (11, 38323), (12, 38326), (Start: 13 @38329 has 1 MA's), (Start: 20 @38359 has 13 MA's), (Start: 21 @38374 has 23 MA's), (23, 38428), (24, 38458), (26, 38518),

Gene: Breezona_50 Start: 38218, Stop: 38394, Start Num: 20

Candidate Starts for Breezona_50:

(Start: 4 @38149 has 2 MA's), (7, 38167), (11, 38182), (Start: 13 @38188 has 1 MA's), (17, 38200), (Start: 20 @38218 has 13 MA's), (Start: 21 @38233 has 23 MA's), (22, 38266), (27, 38368),

Gene: Bromden_49 Start: 37815, Stop: 37979, Start Num: 20

Candidate Starts for Bromden_49:

(Start: 4 @37746 has 2 MA's), (8, 37767), (10, 37773), (Start: 13 @37785 has 1 MA's), (15, 37791), (16, 37794), (Start: 18 @37803 has 2 MA's), (Start: 19 @37809 has 2 MA's), (Start: 20 @37815 has 13 MA's), (27, 37965),

Gene: Calm_48 Start: 36672, Stop: 36857, Start Num: 20

Candidate Starts for Calm_48:

(Start: 4 @36603 has 2 MA's), (6, 36618), (7, 36621), (12, 36639), (14, 36645), (17, 36654), (Start: 18 @36660 has 2 MA's), (Start: 20 @36672 has 13 MA's), (Start: 21 @36687 has 23 MA's), (25, 36804),

Gene: Chaser_46 Start: 36748, Stop: 36918, Start Num: 19

Candidate Starts for Chaser_46:

(3, 36664), (Start: 4 @36685 has 2 MA's), (5, 36691), (8, 36706), (10, 36712), (Start: 13 @36724 has 1 MA's), (15, 36730), (Start: 18 @36742 has 2 MA's), (Start: 19 @36748 has 2 MA's), (Start: 20 @36754 has 13 MA's), (27, 36904),

Gene: CicholasNage_48 Start: 36693, Stop: 36878, Start Num: 20

Candidate Starts for CicholasNage_48:

(Start: 4 @36624 has 2 MA's), (6, 36639), (7, 36642), (12, 36660), (14, 36666), (17, 36675), (Start: 18 @36681 has 2 MA's), (Start: 20 @36693 has 13 MA's), (Start: 21 @36708 has 23 MA's), (25, 36825),

Gene: Clautastrophe_47 Start: 38331, Stop: 38507, Start Num: 21

Candidate Starts for Clautastrophe_47:

(3, 38226), (Start: 4 @38247 has 2 MA's), (11, 38280), (12, 38283), (Start: 20 @38316 has 13 MA's), (Start: 21 @38331 has 23 MA's), (23, 38385), (27, 38481),

Gene: Crossroads_50 Start: 38151, Stop: 38396, Start Num: 4

Candidate Starts for Crossroads_50:

(Start: 4 @38151 has 2 MA's), (7, 38169), (11, 38184), (Start: 13 @38190 has 1 MA's), (17, 38202), (Start: 20 @38220 has 13 MA's), (Start: 21 @38235 has 23 MA's), (22, 38268), (27, 38370),

Gene: DanBing_49 Start: 38073, Stop: 38249, Start Num: 20

Candidate Starts for DanBing_49:

(Start: 4 @38004 has 2 MA's), (7, 38022), (11, 38037), (Start: 13 @38043 has 1 MA's), (15, 38049), (16, 38052), (17, 38055), (Start: 20 @38073 has 13 MA's), (Start: 21 @38088 has 23 MA's), (22, 38121), (27, 38223),

Gene: DirkDirk_47 Start: 36650, Stop: 36820, Start Num: 21

Candidate Starts for DirkDirk_47:

(Start: 4 @36566 has 2 MA's), (6, 36581), (7, 36584), (12, 36602), (14, 36608), (Start: 18 @36623 has 2 MA's), (Start: 20 @36635 has 13 MA's), (Start: 21 @36650 has 23 MA's),

Gene: Douge_46 Start: 36693, Stop: 36911, Start Num: 13

Candidate Starts for Douge_46:

(Start: 4 @36654 has 2 MA's), (11, 36687), (Start: 13 @36693 has 1 MA's), (17, 36705), (Start: 20 @36723 has 13 MA's), (23, 36786), (26, 36882),

Gene: Douzhi_47 Start: 36797, Stop: 36985, Start Num: 20

Candidate Starts for Douzhi_47:

(Start: 4 @36728 has 2 MA's), (7, 36746), (11, 36761), (Start: 13 @36767 has 1 MA's), (17, 36779), (Start: 20 @36797 has 13 MA's), (23, 36860), (26, 36956),

Gene: DuncansLeg_47 Start: 38357, Stop: 38530, Start Num: 21

Candidate Starts for DuncansLeg_47:

(1, 38126), (2, 38216), (3, 38252), (Start: 4 @38273 has 2 MA's), (11, 38306), (12, 38309), (Start: 13 @38312 has 1 MA's), (Start: 20 @38342 has 13 MA's), (Start: 21 @38357 has 23 MA's), (22, 38402), (23, 38411), (24, 38441), (26, 38501),

Gene: DyoEdafos_49 Start: 37016, Stop: 37186, Start Num: 19

Candidate Starts for DyoEdafos_49:

(Start: 4 @36953 has 2 MA's), (5, 36959), (9, 36977), (10, 36980), (Start: 13 @36992 has 1 MA's), (15, 36998), (Start: 18 @37010 has 2 MA's), (Start: 19 @37016 has 2 MA's), (Start: 20 @37022 has 13 MA's), (27, 37172),

Gene: Ellson_47 Start: 38387, Stop: 38560, Start Num: 21

Candidate Starts for Ellson_47:

(1, 38156), (2, 38246), (3, 38282), (Start: 4 @38303 has 2 MA's), (11, 38336), (12, 38339), (Start: 13 @38342 has 1 MA's), (Start: 20 @38372 has 13 MA's), (Start: 21 @38387 has 23 MA's), (22, 38432), (23, 38441), (24, 38471), (26, 38531),

Gene: Enceladus_47 Start: 36645, Stop: 36815, Start Num: 21

Candidate Starts for Enceladus_47:

(Start: 4 @36561 has 2 MA's), (6, 36576), (7, 36579), (12, 36597), (14, 36603), (Start: 18 @36618 has 2 MA's), (Start: 20 @36630 has 13 MA's), (Start: 21 @36645 has 23 MA's),

Gene: FarmResident_48 Start: 36768, Stop: 36956, Start Num: 20

Candidate Starts for FarmResident_48:

(Start: 4 @36699 has 2 MA's), (7, 36717), (11, 36732), (Start: 13 @36738 has 1 MA's), (17, 36750), (Start: 20 @36768 has 13 MA's), (23, 36831), (26, 36927),

Gene: Finnry_47 Start: 38335, Stop: 38511, Start Num: 21

Candidate Starts for Finnry_47:

(3, 38230), (Start: 4 @38251 has 2 MA's), (11, 38284), (12, 38287), (Start: 20 @38320 has 13 MA's), (Start: 21 @38335 has 23 MA's), (23, 38389), (27, 38485),

Gene: Halena_47 Start: 36671, Stop: 36856, Start Num: 20

Candidate Starts for Halena_47:

(Start: 4 @36602 has 2 MA's), (6, 36617), (7, 36620), (12, 36638), (14, 36644), (Start: 18 @36659 has 2 MA's), (Start: 20 @36671 has 13 MA's), (Start: 21 @36686 has 23 MA's),

Gene: Jobypre_48 Start: 38331, Stop: 38507, Start Num: 21

Candidate Starts for Jobypre_48:

(3, 38226), (Start: 4 @38247 has 2 MA's), (11, 38280), (12, 38283), (Start: 20 @38316 has 13 MA's), (Start: 21 @38331 has 23 MA's), (23, 38385), (27, 38481),

Gene: JoeDirt_47 Start: 36616, Stop: 36813, Start Num: 18

Candidate Starts for JoeDirt_47:

(Start: 4 @36559 has 2 MA's), (6, 36574), (7, 36577), (12, 36595), (14, 36601), (Start: 18 @36616 has 2 MA's), (Start: 20 @36628 has 13 MA's), (Start: 21 @36643 has 23 MA's),

Gene: Jubie_47 Start: 38332, Stop: 38508, Start Num: 21

Candidate Starts for Jubie_47:

(3, 38227), (Start: 4 @38248 has 2 MA's), (11, 38281), (12, 38284), (Start: 20 @38317 has 13 MA's), (Start: 21 @38332 has 23 MA's), (23, 38386), (27, 38482),

Gene: Kingsolomon_47 Start: 38331, Stop: 38507, Start Num: 21

Candidate Starts for Kingsolomon_47:

(3, 38226), (Start: 4 @38247 has 2 MA's), (11, 38280), (12, 38283), (Start: 20 @38316 has 13 MA's), (Start: 21 @38331 has 23 MA's), (23, 38385), (27, 38481),

Gene: KirDoubleO7_46 Start: 38361, Stop: 38534, Start Num: 21

Candidate Starts for KirDoubleO7_46:

(1, 38130), (2, 38220), (3, 38256), (Start: 4 @38277 has 2 MA's), (11, 38310), (12, 38313), (Start: 13 @38316 has 1 MA's), (Start: 20 @38346 has 13 MA's), (Start: 21 @38361 has 23 MA's), (22, 38406), (23, 38415), (24, 38445), (26, 38505),

Gene: Krypton555_49 Start: 38305, Stop: 38478, Start Num: 21

Candidate Starts for Krypton555_49:

(1, 38074), (3, 38200), (Start: 4 @38221 has 2 MA's), (11, 38254), (12, 38257), (Start: 13 @38260 has 1 MA's), (Start: 20 @38290 has 13 MA's), (Start: 21 @38305 has 23 MA's), (23, 38359), (24, 38389), (26, 38449),

Gene: LeBron_48 Start: 36672, Stop: 36857, Start Num: 20

Candidate Starts for LeBron_48:

(Start: 4 @36603 has 2 MA's), (6, 36618), (7, 36621), (12, 36639), (14, 36645), (Start: 18 @36660 has 2 MA's), (Start: 20 @36672 has 13 MA's), (Start: 21 @36687 has 23 MA's),

Gene: LiyuLake_47 Start: 38377, Stop: 38550, Start Num: 21

Candidate Starts for LiyuLake_47:

(1, 38146), (2, 38236), (3, 38272), (Start: 4 @38293 has 2 MA's), (11, 38326), (12, 38329), (Start: 13 @38332 has 1 MA's), (Start: 20 @38362 has 13 MA's), (Start: 21 @38377 has 23 MA's), (22, 38422), (23, 38431), (24, 38461), (26, 38521),

Gene: Lolly9_47 Start: 38143, Stop: 38316, Start Num: 21

Candidate Starts for Lolly9_47:

(1, 37912), (3, 38038), (Start: 4 @38059 has 2 MA's), (11, 38092), (12, 38095), (Start: 13 @38098 has 1 MA's), (Start: 20 @38128 has 13 MA's), (Start: 21 @38143 has 23 MA's), (23, 38197), (24, 38227), (26, 38287),

Gene: Lumos_48 Start: 38328, Stop: 38504, Start Num: 21

Candidate Starts for Lumos_48:

(3, 38223), (Start: 4 @38244 has 2 MA's), (11, 38277), (Start: 20 @38313 has 13 MA's), (Start: 21 @38328 has 23 MA's), (23, 38382), (27, 38478),

Gene: MAckerman_48 Start: 36680, Stop: 36850, Start Num: 21

Candidate Starts for MAckerman_48:

(Start: 4 @36596 has 2 MA's), (6, 36611), (7, 36614), (12, 36632), (14, 36638), (Start: 18 @36653 has 2 MA's), (Start: 20 @36665 has 13 MA's), (Start: 21 @36680 has 23 MA's),

Gene: MiniLon_49 Start: 38144, Stop: 38317, Start Num: 21

Candidate Starts for MiniLon_49:

(1, 37913), (3, 38039), (Start: 4 @38060 has 2 MA's), (11, 38093), (12, 38096), (Start: 13 @38099 has 1 MA's), (Start: 20 @38129 has 13 MA's), (Start: 21 @38144 has 23 MA's), (23, 38198), (24, 38228), (26, 38288),

Gene: MiniMac_49 Start: 38142, Stop: 38315, Start Num: 21

Candidate Starts for MiniMac_49:

(1, 37911), (3, 38037), (Start: 4 @38058 has 2 MA's), (11, 38091), (12, 38094), (Start: 13 @38097 has 1 MA's), (Start: 20 @38127 has 13 MA's), (Start: 21 @38142 has 23 MA's), (23, 38196), (24, 38226), (26, 38286),

Gene: Moostard_47 Start: 38334, Stop: 38510, Start Num: 21

Candidate Starts for Moostard_47:

(3, 38229), (Start: 4 @38250 has 2 MA's), (11, 38283), (12, 38286), (Start: 20 @38319 has 13 MA's), (Start: 21 @38334 has 23 MA's), (23, 38388), (27, 38484),

Gene: MsGreen_47 Start: 38331, Stop: 38507, Start Num: 21

Candidate Starts for MsGreen_47:

(3, 38226), (Start: 4 @38247 has 2 MA's), (11, 38280), (12, 38283), (Start: 20 @38316 has 13 MA's), (Start: 21 @38331 has 23 MA's), (23, 38385), (27, 38481),

Gene: Nicholas_47 Start: 38331, Stop: 38507, Start Num: 21

Candidate Starts for Nicholas_47:

(3, 38226), (Start: 4 @38247 has 2 MA's), (11, 38280), (12, 38283), (Start: 20 @38316 has 13 MA's), (Start: 21 @38331 has 23 MA's), (23, 38385), (27, 38481),

Gene: OhShagHennessy_47 Start: 36618, Stop: 36803, Start Num: 20

Candidate Starts for OhShagHennessy_47:

(Start: 4 @36549 has 2 MA's), (6, 36564), (7, 36567), (12, 36585), (14, 36591), (Start: 18 @36606 has 2 MA's), (Start: 20 @36618 has 13 MA's), (Start: 21 @36633 has 23 MA's),

Gene: PYPDinur_45 Start: 36829, Stop: 37017, Start Num: 20

Candidate Starts for PYPDinur_45:

(Start: 4 @36760 has 2 MA's), (7, 36778), (11, 36793), (Start: 13 @36799 has 1 MA's), (17, 36811), (Start: 20 @36829 has 13 MA's), (23, 36892), (26, 36988),

Gene: Quby_47 Start: 36724, Stop: 36912, Start Num: 20

Candidate Starts for Quby_47:

(Start: 4 @36655 has 2 MA's), (11, 36688), (Start: 13 @36694 has 1 MA's), (17, 36706), (Start: 20 @36724 has 13 MA's), (23, 36787), (26, 36883),

Gene: Rose5_47 Start: 36672, Stop: 36842, Start Num: 21

Candidate Starts for Rose5_47:

(Start: 4 @36588 has 2 MA's), (6, 36603), (7, 36606), (12, 36624), (14, 36630), (17, 36639), (Start: 18 @36645 has 2 MA's), (Start: 20 @36657 has 13 MA's), (Start: 21 @36672 has 23 MA's), (25, 36789),

Gene: Samty_47 Start: 38333, Stop: 38509, Start Num: 21

Candidate Starts for Samty_47:

(3, 38228), (Start: 4 @38249 has 2 MA's), (11, 38282), (12, 38285), (Start: 20 @38318 has 13 MA's), (Start: 21 @38333 has 23 MA's), (23, 38387), (27, 38483),

Gene: Sheng711_47 Start: 36807, Stop: 36995, Start Num: 20

Candidate Starts for Sheng711_47:

(Start: 4 @36738 has 2 MA's), (7, 36756), (11, 36771), (Start: 13 @36777 has 1 MA's), (17, 36789), (Start: 20 @36807 has 13 MA's), (23, 36870), (26, 36966),

Gene: Silverleaf_48 Start: 36665, Stop: 36835, Start Num: 21

Candidate Starts for Silverleaf_48:

(Start: 4 @36581 has 2 MA's), (6, 36596), (7, 36599), (12, 36617), (Start: 13 @36620 has 1 MA's), (14, 36623), (Start: 18 @36638 has 2 MA's), (Start: 20 @36650 has 13 MA's), (Start: 21 @36665 has 23 MA's),

Gene: Snenia_47 Start: 38332, Stop: 38508, Start Num: 21

Candidate Starts for Snenia_47:

(3, 38227), (Start: 4 @38248 has 2 MA's), (11, 38281), (12, 38284), (Start: 20 @38317 has 13 MA's), (Start: 21 @38332 has 23 MA's), (23, 38386), (27, 38482),

Gene: Tyson_47 Start: 36674, Stop: 36844, Start Num: 21

Candidate Starts for Tyson_47:

(Start: 4 @36590 has 2 MA's), (6, 36605), (7, 36608), (12, 36626), (14, 36632), (17, 36641), (Start: 18 @36647 has 2 MA's), (Start: 20 @36659 has 13 MA's), (Start: 21 @36674 has 23 MA's), (25, 36791),

Gene: UPIE_48 Start: 36644, Stop: 36829, Start Num: 20

Candidate Starts for UPIE_48:

(Start: 4 @36575 has 2 MA's), (6, 36590), (7, 36593), (12, 36611), (14, 36617), (Start: 18 @36632 has 2 MA's), (Start: 20 @36644 has 13 MA's), (Start: 21 @36659 has 23 MA's),

Gene: Wamburgxpress_48 Start: 36674, Stop: 36844, Start Num: 21

Candidate Starts for Wamburgxpress_48:

(Start: 4 @36590 has 2 MA's), (6, 36605), (7, 36608), (12, 36626), (14, 36632), (Start: 18 @36647 has 2 MA's), (Start: 20 @36659 has 13 MA's), (Start: 21 @36674 has 23 MA's),

Gene: Whirlwind_48 Start: 38147, Stop: 38320, Start Num: 21

Candidate Starts for Whirlwind_48:

(1, 37916), (3, 38042), (Start: 4 @38063 has 2 MA's), (11, 38096), (12, 38099), (Start: 13 @38102 has 1 MA's), (Start: 20 @38132 has 13 MA's), (Start: 21 @38147 has 23 MA's), (23, 38201), (24, 38231), (26, 38291),

Gene: Winky_50 Start: 38218, Stop: 38394, Start Num: 20

Candidate Starts for Winky_50:

(Start: 4 @38149 has 2 MA's), (7, 38167), (11, 38182), (Start: 13 @38188 has 1 MA's), (17, 38200),
(Start: 20 @38218 has 13 MA's), (Start: 21 @38233 has 23 MA's), (22, 38266), (27, 38368),

Gene: Wyatt2_48 Start: 36657, Stop: 36842, Start Num: 20

Candidate Starts for Wyatt2_48:

(Start: 4 @36588 has 2 MA's), (6, 36603), (7, 36606), (12, 36624), (14, 36630), (17, 36639), (Start: 18
@36645 has 2 MA's), (Start: 20 @36657 has 13 MA's), (Start: 21 @36672 has 23 MA's), (25, 36789),

Gene: Zaria_48 Start: 36672, Stop: 36857, Start Num: 20

Candidate Starts for Zaria_48:

(Start: 4 @36603 has 2 MA's), (6, 36618), (7, 36621), (12, 36639), (14, 36645), (17, 36654), (Start: 18
@36660 has 2 MA's), (Start: 20 @36672 has 13 MA's), (Start: 21 @36687 has 23 MA's), (25, 36804),

Gene: ZhongYanYuan_48 Start: 38074, Stop: 38250, Start Num: 20

Candidate Starts for ZhongYanYuan_48:

(Start: 4 @38005 has 2 MA's), (7, 38023), (11, 38038), (Start: 13 @38044 has 1 MA's), (15, 38050),
(16, 38053), (17, 38056), (Start: 20 @38074 has 13 MA's), (Start: 21 @38089 has 23 MA's), (22,
38122), (27, 38224),