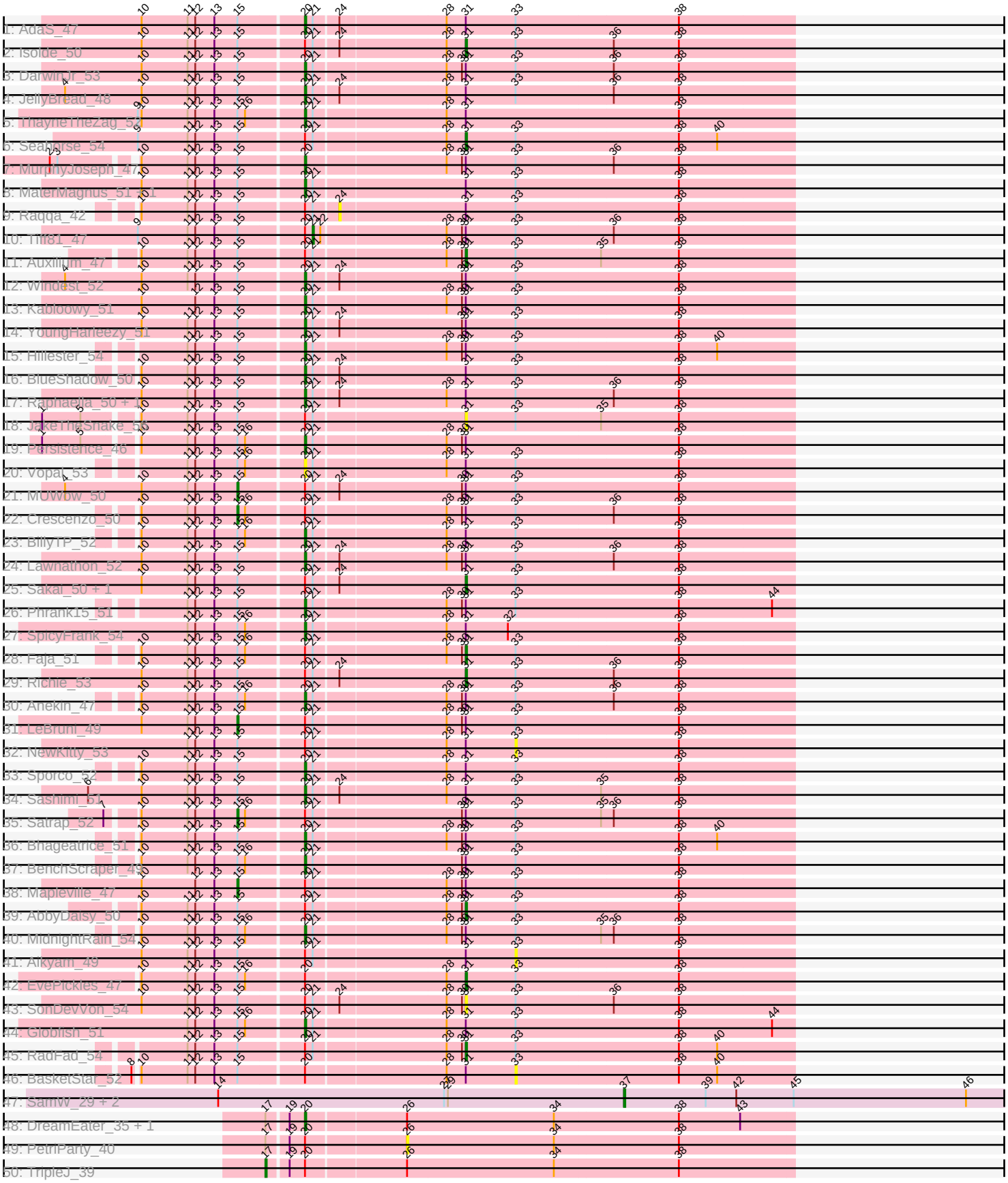
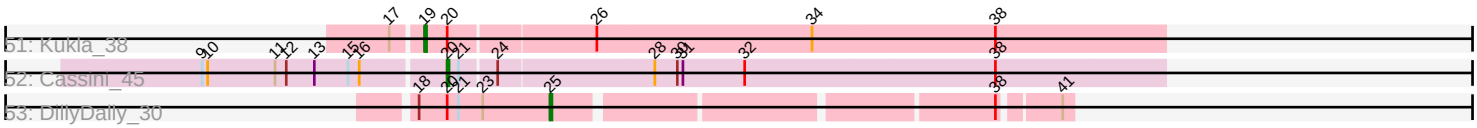
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1: AdaS_47
2: Isolde_50
3: Darwin0r_53
4: JellyBread_48
5: ThayneTheZag_52
6: Seahorse_54
7: MurphyJoseph_47
8: MaterMagnus_51
9: Raqqa_42
10: Tiff81_47
11: Auxilium_47
12: Windust_52
13: Kabloowy_51
14: YoungHaneezy_51
15: Hillester_54
16: BlueShadow_50
17: Raphaella_50 + 1
18: JakeTheSnake_56
19: Persistence_46
20: Vopal_53
21: MOWbw_50
22: Crescenzo_50
23: BillyTP_52
24: Lawnathon_52
25: Sakai_50 + 1
26: Phrank15_51
27: SpicyFrank_54
28: Faja_51
29: Richie_53
30: Anekin_47
31: LeBrunt_49
32: NewKitty_53
33: Sporco_52
34: Sashimi_51
35: Satrap_52
36: Bmageatrice_51
37: BenchScraper_49
38: Mapleville_47
39: AbbyDaisy_50
40: MidnightRain_54
41: Arkyam_49
42: EvePickles_47
43: SonDevVon_54
44: Globfish_51
45: RadFad_54
46: BasketStar_52
47: SamW_29 + 2
48: DreamEater_35 + 1
49: PetriParty_40
50: TripleJ_39

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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 347652 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347652 has 59 members, 8 are drafts.

Phages represented in each track:
- Track 1 : AdaS_47
- Track 2 : Isolde_50
- Track 3 : DarwinJr_53
- Track 4 : JellyBread_48
- Track 5 : ThayneTheZag_52
- Track 6 : Seahorse_54
- Track 7 : MurphyJoseph_47
- Track 8 : MaterMagnus_51, Lasker_50
- Track 9 : Raqqa_42
- Track 10 : Tiff81_47
- Track 11 : Auxilium_47
- Track 12 : Windest_52
- Track 13 : Kabloowy_51
- Track 14 : YoungHarleezy_51
- Track 15 : Hillester_54
- Track 16 : BlueShadow_50
- Track 17 : Raphaella_50, CookieBear_51
- Track 18 : JakeTheSnake_56
- Track 19 : Persistence_46
- Track 20 : Vopal_53
- Track 21 : MUWow_50
- Track 22 : Crescenzo_50
- Track 23 : BillyTP_52
- Track 24 : Lawnathon_52
- Track 25 : Sakai_50, Gorpy_51
- Track 26 : Phrank15_51
- Track 27 : SpicyFrank_54
- Track 28 : Faja_51
- Track 29 : Richie_53
- Track 30 : Anekin_47
- Track 31 : LeBruni_49
- Track 32 : NewKitty_53
- Track 33 : Sporco_52
- Track 34 : Sashimi_51
- Track 35 : Satrap_52
- Track 36 : Bhageatrice_51
- Track 37 : BenchScraper_49

• Track 38 : Mapleville_47
• Track 39 : AbbyDaisy_50
• Track 40 : MidnightRain_54
• Track 41 : Aikyam_49
• Track 42 : EvePickles_47
• Track 43 : SonDevVon_54
• Track 44 : Globfish_51
• Track 45 : RadFad_54
• Track 46 : BasketStar_52
• Track 47 : SamW_29, Troy_29, Lederberg_29
• Track 48 : DreamEater_35, GUPitcher_35
• Track 49 : PetriParty_40
• Track 50 : TripleJ_39
• Track 51 : Kukla_38
• Track 52 : Cassini_45
• Track 53 : DillyDally_30

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

The start number called the most often in the published annotations is 20, it was called in 29 of the 51 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• AdaS_47, Anekin_47, BenchScraper_49, Bhageatrice_51, BillyTP_52, BlueShadow_50, Cassini_45, CookieBear_51, DarwinJr_53, DreamEater_35, GUPitcher_35, Globfish_51, Hillester_54, JellyBread_48, Kabloowy_51, Lasker_50, Lawnathon_52, MaterMagnus_51, MidnightRain_54, MurphyJoseph_47, Persistence_46, Phrank15_51, Raphaella_50, Sashimi_51, SpicyFrank_54, Sporco_52, ThayneTheZag_52, Vopal_53, Windest_52, YoungHarleezy_51,

Genes that have the "Most Annotated" start but do not call it:
• AbbyDaisy_50, Aikyam_49, Auxilium_47, BasketStar_52, Crescenzo_50, DillyDally_30, EvePickles_47, Faja_51, Gorpy_51, Isolde_50, JakeTheSnake_56, Kukla_38, LeBruni_49, MUWow_50, Mapleville_47, NewKitty_53, PetriParty_40, RadFad_54, Raqqa_42, Richie_53, Sakai_50, Satrap_52, Seahorse_54, SonDevVon_54, Tiff81_47, TripleJ_39,

Genes that do not have the "Most Annotated" start:
• Lederberg_29, SamW_29, Troy_29,

Summary by start number:

Start 15:
• Found in 50 of 59 (84.7%) of genes in pham
• Manual Annotations of this start: 5 of 51
• Called 10.0% of time when present
• Phage (with cluster) where this start called: Crescenzo_50 (AY), LeBruni_49 (AY), MUWow_50 (AY), Mapleville_47 (AY), Satrap_52 (AY),

Start 17:

• Found in 5 of 59 (8.5%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 20.0% of time when present
• Phage (with cluster) where this start called: TripleJ_39 (FJ),

Start 19:
• Found in 5 of 59 (8.5%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Kukla_38 (FJ),

Start 20:
• Found in 56 of 59 (94.9%) of genes in pham
• Manual Annotations of this start: 29 of 51
• Called 53.6% of time when present
• Phage (with cluster) where this start called: AdaS_47 (AY), Anekin_47 (AY), BenchScraper_49 (AY), Bhageatrice_51 (AY), BillyTP_52 (AY), BlueShadow_50 (AY), Cassini_45 (FN), CookieBear_51 (AY), DarwinJr_53 (AY), DreamEater_35 (FJ), GUPitcher_35 (FJ), Globfish_51 (AY), Hillester_54 (AY), JellyBread_48 (AY), Kabloowy_51 (AY), Lasker_50 (AY), Lawnathon_52 (AY), MaterMagnus_51 (AY), MidnightRain_54 (AY), MurphyJoseph_47 (AY), Persistence_46 (AY), Phrank15_51 (AY), Raphaella_50 (AY), Sashimi_51 (AY), SpicyFrank_54 (AY), Sporco_52 (AY), ThayneTheZag_52 (AY), Vopal_53 (AY), Windest_52 (AY), YoungHarleezy_51 (AY),

Start 21:
• Found in 48 of 59 (81.4%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 2.1% of time when present
• Phage (with cluster) where this start called: Tiff81_47 (AY),

Start 24:
• Found in 17 of 59 (28.8%) of genes in pham
• No Manual Annotations of this start.
• Called 5.9% of time when present
• Phage (with cluster) where this start called: Raqqa_42 (AY),

Start 25:
• Found in 1 of 59 (1.7%) of genes in pham
• Manual Annotations of this start: 1 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: DillyDally_30 (singleton),

Start 26:
• Found in 5 of 59 (8.5%) of genes in pham
• No Manual Annotations of this start.
• Called 20.0% of time when present
• Phage (with cluster) where this start called: PetriParty_40 (FJ),

Start 31:
• Found in 50 of 59 (84.7%) of genes in pham
• Manual Annotations of this start: 10 of 51
• Called 24.0% of time when present

• Phage (with cluster) where this start called: AbbyDaisy_50 (AY), Auxilium_47 (AY), EvePickles_47 (AY), Faja_51 (AY), Gorpy_51 (AY), Isolde_50 (AY), JakeTheSnake_56 (AY), RadFad_54 (AY), Richie_53 (AY), Sakai_50 (AY), Seahorse_54 (AY), SonDevVon_54 (AY),

Start 33:
• Found in 46 of 59 (78.0%) of genes in pham
• No Manual Annotations of this start.
• Called 6.5% of time when present
• Phage (with cluster) where this start called: Aikyam_49 (AY), BasketStar_52 (AY), NewKitty_53 (AY),

Start 37:
• Found in 3 of 59 (5.1%) of genes in pham
• Manual Annotations of this start: 3 of 51
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Lederberg_29 (EP), SamW_29 (EP), Troy_29 (EP),

Summary by clusters:

There are 5 clusters represented in this pham: AY, FJ, EP, FN, singleton,

Info for manual annotations of cluster AY:
•Start number 15 was manually annotated 5 times for cluster AY.
•Start number 20 was manually annotated 26 times for cluster AY.
•Start number 21 was manually annotated 1 time for cluster AY.
•Start number 31 was manually annotated 10 times for cluster AY.

Info for manual annotations of cluster EP:
•Start number 37 was manually annotated 3 times for cluster EP.

Info for manual annotations of cluster FJ:
•Start number 17 was manually annotated 1 time for cluster FJ.
•Start number 19 was manually annotated 1 time for cluster FJ.
•Start number 20 was manually annotated 2 times for cluster FJ.

Info for manual annotations of cluster FN:
•Start number 20 was manually annotated 1 time for cluster FN.

Gene Information:

Gene: AbbyDaisy_50 Start: 31666, Stop: 31412, Start Num: 31
Candidate Starts for AbbyDaisy_50:
(10, 31909), (11, 31873), (12, 31867), (13, 31852), (Start: 15 @31834 has 5 MA's), (Start: 20 @31786 has 29 MA's), (Start: 21 @31780 has 1 MA's), (28, 31681), (30, 31669), (Start: 31 @31666 has 10 MA's), (33, 31627), (38, 31501),

Gene: AdaS_47 Start: 29721, Stop: 29347, Start Num: 20
Candidate Starts for AdaS_47:

(10, 29844), (11, 29808), (12, 29802), (13, 29787), (Start: 15 @29769 has 5 MA's), (Start: 20 @29721 has 29 MA's), (Start: 21 @29715 has 1 MA's), (24, 29697), (28, 29616), (Start: 31 @29601 has 10 MA's), (33, 29562), (38, 29436),

Gene: Aikyam_49 Start: 29332, Stop: 29117, Start Num: 33
Candidate Starts for Aikyam_49:
(10, 29614), (11, 29578), (12, 29572), (13, 29557), (Start: 15 @29539 has 5 MA's), (Start: 20 @29491 has 29 MA's), (Start: 21 @29485 has 1 MA's), (Start: 31 @29371 has 10 MA's), (33, 29332), (38, 29206),

Gene: Anekin_47 Start: 30921, Stop: 30547, Start Num: 20
Candidate Starts for Anekin_47:
(10, 31044), (11, 31008), (12, 31002), (13, 30987), (Start: 15 @30969 has 5 MA's), (16, 30963), (Start: 20 @30921 has 29 MA's), (Start: 21 @30915 has 1 MA's), (28, 30816), (30, 30804), (Start: 31 @30801 has 10 MA's), (33, 30762), (36, 30687), (38, 30636),

Gene: Auxilium_47 Start: 28937, Stop: 28683, Start Num: 31
Candidate Starts for Auxilium_47:
(10, 29180), (11, 29144), (12, 29138), (13, 29123), (Start: 15 @29105 has 5 MA's), (Start: 20 @29057 has 29 MA's), (Start: 21 @29051 has 1 MA's), (28, 28952), (30, 28940), (Start: 31 @28937 has 10 MA's), (33, 28898), (35, 28832), (38, 28772),

Gene: BasketStar_52 Start: 31823, Stop: 31608, Start Num: 33
Candidate Starts for BasketStar_52:
(8, 32108), (10, 32105), (11, 32069), (12, 32063), (13, 32048), (Start: 15 @32030 has 5 MA's), (Start: 20 @31982 has 29 MA's), (28, 31877), (Start: 31 @31862 has 10 MA's), (33, 31823), (38, 31697), (40, 31667),

Gene: BenchScraper_49 Start: 30807, Stop: 30433, Start Num: 20
Candidate Starts for BenchScraper_49:
(10, 30930), (11, 30894), (12, 30888), (13, 30873), (Start: 15 @30855 has 5 MA's), (16, 30849), (Start: 20 @30807 has 29 MA's), (Start: 21 @30801 has 1 MA's), (30, 30690), (Start: 31 @30687 has 10 MA's), (33, 30648), (38, 30522),

Gene: Bhageatrice_51 Start: 32880, Stop: 32506, Start Num: 20
Candidate Starts for Bhageatrice_51:
(10, 33003), (11, 32967), (12, 32961), (13, 32946), (Start: 15 @32928 has 5 MA's), (Start: 20 @32880 has 29 MA's), (Start: 21 @32874 has 1 MA's), (28, 32775), (30, 32763), (Start: 31 @32760 has 10 MA's), (33, 32721), (38, 32595), (40, 32565),

Gene: BillyTP_52 Start: 32678, Stop: 32304, Start Num: 20
Candidate Starts for BillyTP_52:
(10, 32801), (11, 32765), (12, 32759), (13, 32744), (Start: 15 @32726 has 5 MA's), (16, 32720), (Start: 20 @32678 has 29 MA's), (Start: 21 @32672 has 1 MA's), (28, 32573), (Start: 31 @32558 has 10 MA's), (33, 32519), (38, 32393),

Gene: BlueShadow_50 Start: 31468, Stop: 31094, Start Num: 20
Candidate Starts for BlueShadow_50:
(10, 31591), (11, 31555), (12, 31549), (13, 31534), (Start: 15 @31516 has 5 MA's), (Start: 20 @31468 has 29 MA's), (Start: 21 @31462 has 1 MA's), (24, 31444), (Start: 31 @31348 has 10 MA's), (33, 31309), (38, 31183),

Gene: Cassini_45 Start: 30149, Stop: 29775, Start Num: 20

Candidate Starts for Cassini_45:
(9, 30275), (10, 30272), (11, 30236), (12, 30230), (13, 30215), (Start: 15 @30197 has 5 MA's), (16, 30191), (Start: 20 @30149 has 29 MA's), (Start: 21 @30143 has 1 MA's), (24, 30125), (28, 30044), (30, 30032), (Start: 31 @30029 has 10 MA's), (32, 29996), (38, 29864),

Gene: CookieBear_51 Start: 31471, Stop: 31097, Start Num: 20
Candidate Starts for CookieBear_51:
(10, 31594), (11, 31558), (12, 31552), (13, 31537), (Start: 15 @31519 has 5 MA's), (Start: 20 @31471 has 29 MA's), (Start: 21 @31465 has 1 MA's), (24, 31447), (28, 31366), (Start: 31 @31351 has 10 MA's), (33, 31312), (36, 31237), (38, 31186),

Gene: Crescenzo_50 Start: 32020, Stop: 31598, Start Num: 15
Candidate Starts for Crescenzo_50:
(10, 32095), (11, 32059), (12, 32053), (13, 32038), (Start: 15 @32020 has 5 MA's), (16, 32014), (Start: 20 @31972 has 29 MA's), (Start: 21 @31966 has 1 MA's), (28, 31867), (30, 31855), (Start: 31 @31852 has 10 MA's), (33, 31813), (36, 31738), (38, 31687),

Gene: DarwinJr_53 Start: 32450, Stop: 32076, Start Num: 20
Candidate Starts for DarwinJr_53:
(10, 32573), (11, 32537), (12, 32531), (13, 32516), (Start: 15 @32498 has 5 MA's), (Start: 20 @32450 has 29 MA's), (Start: 21 @32444 has 1 MA's), (28, 32345), (30, 32333), (Start: 31 @32330 has 10 MA's), (33, 32291), (36, 32216), (38, 32165),

Gene: DillyDally_30 Start: 24368, Stop: 24120, Start Num: 25
Candidate Starts for DillyDally_30:
(18, 24437), (Start: 20 @24422 has 29 MA's), (Start: 21 @24416 has 1 MA's), (23, 24404), (Start: 25 @24368 has 1 MA's), (38, 24152), (41, 24125),

Gene: DreamEater_35 Start: 29139, Stop: 28765, Start Num: 20
Candidate Starts for DreamEater_35:
(Start: 17 @29166 has 1 MA's), (Start: 19 @29151 has 1 MA's), (Start: 20 @29139 has 29 MA's), (26, 29064), (34, 28950), (38, 28854), (43, 28806),

Gene: EvePickles_47 Start: 31556, Stop: 31302, Start Num: 31
Candidate Starts for EvePickles_47:
(10, 31799), (11, 31763), (12, 31757), (13, 31742), (Start: 15 @31724 has 5 MA's), (16, 31718), (Start: 20 @31676 has 29 MA's), (28, 31571), (Start: 31 @31556 has 10 MA's), (33, 31517), (38, 31391),

Gene: Faja_51 Start: 32526, Stop: 32272, Start Num: 31
Candidate Starts for Faja_51:
(10, 32769), (11, 32733), (12, 32727), (13, 32712), (Start: 15 @32694 has 5 MA's), (16, 32688), (Start: 20 @32646 has 29 MA's), (Start: 21 @32640 has 1 MA's), (28, 32541), (30, 32529), (Start: 31 @32526 has 10 MA's), (33, 32487), (38, 32361),

Gene: GUPitcher_35 Start: 29370, Stop: 28996, Start Num: 20
Candidate Starts for GUPitcher_35:
(Start: 17 @29397 has 1 MA's), (Start: 19 @29382 has 1 MA's), (Start: 20 @29370 has 29 MA's), (26, 29295), (34, 29181), (38, 29085), (43, 29037),

Gene: Globfish_51 Start: 31569, Stop: 31195, Start Num: 20
Candidate Starts for Globfish_51:
(11, 31656), (12, 31650), (13, 31635), (Start: 15 @31617 has 5 MA's), (16, 31611), (Start: 20 @31569 has 29 MA's), (Start: 21 @31563 has 1 MA's), (28, 31464), (Start: 31 @31449 has 10 MA's), (33,

31410), (38, 31284), (44, 31212),

Gene: Gorpy_51 Start: 32343, Stop: 32089, Start Num: 31
Candidate Starts for Gorpy_51:
(10, 32586), (11, 32550), (12, 32544), (13, 32529), (Start: 15 @32511 has 5 MA's), (Start: 20 @32463 has 29 MA's), (Start: 21 @32457 has 1 MA's), (24, 32439), (Start: 31 @32343 has 10 MA's), (33, 32304), (38, 32178),

Gene: Hillester_54 Start: 32404, Stop: 32030, Start Num: 20
Candidate Starts for Hillester_54:
(11, 32491), (12, 32485), (13, 32470), (Start: 15 @32452 has 5 MA's), (Start: 20 @32404 has 29 MA's), (Start: 21 @32398 has 1 MA's), (28, 32299), (30, 32287), (Start: 31 @32284 has 10 MA's), (33, 32245), (38, 32119), (40, 32089),

Gene: Isolde_50 Start: 31020, Stop: 30766, Start Num: 31
Candidate Starts for Isolde_50:
(10, 31263), (11, 31227), (12, 31221), (13, 31206), (Start: 15 @31188 has 5 MA's), (Start: 20 @31140 has 29 MA's), (Start: 21 @31134 has 1 MA's), (24, 31116), (28, 31035), (Start: 31 @31020 has 10 MA's), (33, 30981), (36, 30906), (38, 30855),

Gene: JakeTheSnake_56 Start: 33383, Stop: 33129, Start Num: 31
Candidate Starts for JakeTheSnake_56:
(1, 33692), (5, 33662), (10, 33626), (11, 33590), (12, 33584), (13, 33569), (Start: 15 @33551 has 5 MA's), (Start: 20 @33503 has 29 MA's), (Start: 21 @33497 has 1 MA's), (Start: 31 @33383 has 10 MA's), (33, 33344), (35, 33278), (38, 33218),

Gene: JellyBread_48 Start: 30261, Stop: 29887, Start Num: 20
Candidate Starts for JellyBread_48:
(4, 30444), (10, 30384), (11, 30348), (12, 30342), (13, 30327), (Start: 15 @30309 has 5 MA's), (Start: 20 @30261 has 29 MA's), (Start: 21 @30255 has 1 MA's), (24, 30237), (28, 30156), (Start: 31 @30141 has 10 MA's), (33, 30102), (36, 30027), (38, 29976),

Gene: Kabloowy_51 Start: 32155, Stop: 31781, Start Num: 20
Candidate Starts for Kabloowy_51:
(10, 32278), (12, 32236), (13, 32221), (Start: 15 @32203 has 5 MA's), (Start: 20 @32155 has 29 MA's), (Start: 21 @32149 has 1 MA's), (28, 32050), (30, 32038), (Start: 31 @32035 has 10 MA's), (33, 31996), (38, 31870),

Gene: Kukla_38 Start: 28870, Stop: 28484, Start Num: 19
Candidate Starts for Kukla_38:
(Start: 17 @28885 has 1 MA's), (Start: 19 @28870 has 1 MA's), (Start: 20 @28858 has 29 MA's), (26, 28783), (34, 28669), (38, 28573),

Gene: Lasker_50 Start: 31915, Stop: 31541, Start Num: 20
Candidate Starts for Lasker_50:
(10, 32038), (11, 32002), (12, 31996), (13, 31981), (Start: 15 @31963 has 5 MA's), (Start: 20 @31915 has 29 MA's), (Start: 21 @31909 has 1 MA's), (Start: 31 @31795 has 10 MA's), (33, 31756), (38, 31630),

Gene: Lawnathon_52 Start: 31628, Stop: 31254, Start Num: 20
Candidate Starts for Lawnathon_52:
(10, 31751), (11, 31715), (12, 31709), (13, 31694), (Start: 15 @31676 has 5 MA's), (Start: 20 @31628 has 29 MA's), (Start: 21 @31622 has 1 MA's), (24, 31604), (28, 31523), (30, 31511), (Start: 31

@31508 has 10 MA's), (33, 31469), (36, 31394), (38, 31343),

Gene: LeBruni_49 Start: 30484, Stop: 30062, Start Num: 15
Candidate Starts for LeBruni_49:
(10, 30559), (11, 30523), (12, 30517), (13, 30502), (Start: 15 @30484 has 5 MA's), (Start: 20 @30436 has 29 MA's), (Start: 21 @30430 has 1 MA's), (28, 30331), (30, 30319), (Start: 31 @30316 has 10 MA's), (33, 30277), (38, 30151),

Gene: Lederberg_29 Start: 26515, Stop: 26210, Start Num: 37
Candidate Starts for Lederberg_29:
(14, 26833), (27, 26656), (29, 26653), (Start: 37 @26515 has 3 MA's), (39, 26452), (42, 26428), (45, 26383), (46, 26248),

Gene: MUWow_50 Start: 31453, Stop: 31031, Start Num: 15
Candidate Starts for MUWow_50:
(4, 31588), (10, 31528), (11, 31492), (12, 31486), (13, 31471), (Start: 15 @31453 has 5 MA's), (Start: 20 @31405 has 29 MA's), (Start: 21 @31399 has 1 MA's), (24, 31381), (30, 31288), (Start: 31 @31285 has 10 MA's), (33, 31246), (38, 31120),

Gene: Mapleville_47 Start: 31012, Stop: 30590, Start Num: 15
Candidate Starts for Mapleville_47:
(10, 31087), (12, 31045), (13, 31030), (Start: 15 @31012 has 5 MA's), (Start: 20 @30964 has 29 MA's), (Start: 21 @30958 has 1 MA's), (28, 30859), (30, 30847), (Start: 31 @30844 has 10 MA's), (33, 30805), (38, 30679),

Gene: MaterMagnus_51 Start: 31663, Stop: 31289, Start Num: 20
Candidate Starts for MaterMagnus_51:
(10, 31786), (11, 31750), (12, 31744), (13, 31729), (Start: 15 @31711 has 5 MA's), (Start: 20 @31663 has 29 MA's), (Start: 21 @31657 has 1 MA's), (Start: 31 @31543 has 10 MA's), (33, 31504), (38, 31378),

Gene: MidnightRain_54 Start: 32585, Stop: 32211, Start Num: 20
Candidate Starts for MidnightRain_54:
(10, 32708), (11, 32672), (12, 32666), (13, 32651), (Start: 15 @32633 has 5 MA's), (16, 32627), (Start: 20 @32585 has 29 MA's), (Start: 21 @32579 has 1 MA's), (28, 32480), (30, 32468), (Start: 31 @32465 has 10 MA's), (33, 32426), (35, 32360), (36, 32351), (38, 32300),

Gene: MurphyJoseph_47 Start: 30022, Stop: 29648, Start Num: 20
Candidate Starts for MurphyJoseph_47:
(2, 30202), (3, 30196), (10, 30145), (11, 30109), (12, 30103), (13, 30088), (Start: 15 @30070 has 5 MA's), (Start: 20 @30022 has 29 MA's), (28, 29917), (30, 29905), (Start: 31 @29902 has 10 MA's), (33, 29863), (36, 29788), (38, 29737),

Gene: NewKitty_53 Start: 31174, Stop: 30959, Start Num: 33
Candidate Starts for NewKitty_53:
(11, 31420), (12, 31414), (13, 31399), (Start: 15 @31381 has 5 MA's), (Start: 20 @31333 has 29 MA's), (Start: 21 @31327 has 1 MA's), (28, 31228), (Start: 31 @31213 has 10 MA's), (33, 31174), (38, 31048),

Gene: Persistence_46 Start: 30198, Stop: 29824, Start Num: 20
Candidate Starts for Persistence_46:
(1, 30387), (5, 30357), (10, 30321), (11, 30285), (12, 30279), (13, 30264), (Start: 15 @30246 has 5 MA's), (16, 30240), (Start: 20 @30198 has 29 MA's), (Start: 21 @30192 has 1 MA's), (28, 30093), (30,

30081), (Start: 31 @30078 has 10 MA's), (38, 29913),

Gene: PetriParty_40 Start: 29020, Stop: 28721, Start Num: 26
Candidate Starts for PetriParty_40:
(Start: 17 @29122 has 1 MA's), (Start: 19 @29107 has 1 MA's), (Start: 20 @29095 has 29 MA's), (26, 29020), (34, 28906), (38, 28810),

Gene: Phrank15_51 Start: 31429, Stop: 31055, Start Num: 20
Candidate Starts for Phrank15_51:
(11, 31516), (12, 31510), (13, 31495), (Start: 15 @31477 has 5 MA's), (Start: 20 @31429 has 29 MA's), (Start: 21 @31423 has 1 MA's), (28, 31324), (30, 31312), (Start: 31 @31309 has 10 MA's), (33, 31270), (38, 31144), (44, 31072),

Gene: RadFad_54 Start: 32284, Stop: 32030, Start Num: 31
Candidate Starts for RadFad_54:
(11, 32491), (12, 32485), (13, 32470), (Start: 15 @32452 has 5 MA's), (Start: 20 @32404 has 29 MA's), (Start: 21 @32398 has 1 MA's), (28, 32299), (30, 32287), (Start: 31 @32284 has 10 MA's), (33, 32245), (38, 32119), (40, 32089),

Gene: Raphaella_50 Start: 31072, Stop: 30698, Start Num: 20
Candidate Starts for Raphaella_50:
(10, 31195), (11, 31159), (12, 31153), (13, 31138), (Start: 15 @31120 has 5 MA's), (Start: 20 @31072 has 29 MA's), (Start: 21 @31066 has 1 MA's), (24, 31048), (28, 30967), (Start: 31 @30952 has 10 MA's), (33, 30913), (36, 30838), (38, 30787),

Gene: Raqqa_42 Start: 28245, Stop: 27895, Start Num: 24
Candidate Starts for Raqqa_42:
(10, 28392), (11, 28356), (12, 28350), (13, 28335), (Start: 15 @28317 has 5 MA's), (Start: 20 @28269 has 29 MA's), (Start: 21 @28263 has 1 MA's), (24, 28245), (Start: 31 @28149 has 10 MA's), (33, 28110), (38, 27984),

Gene: Richie_53 Start: 32021, Stop: 31767, Start Num: 31
Candidate Starts for Richie_53:
(10, 32264), (11, 32228), (12, 32222), (13, 32207), (Start: 15 @32189 has 5 MA's), (Start: 20 @32141 has 29 MA's), (Start: 21 @32135 has 1 MA's), (24, 32117), (Start: 31 @32021 has 10 MA's), (33, 31982), (36, 31907), (38, 31856),

Gene: Sakai_50 Start: 31054, Stop: 30800, Start Num: 31
Candidate Starts for Sakai_50:
(10, 31297), (11, 31261), (12, 31255), (13, 31240), (Start: 15 @31222 has 5 MA's), (Start: 20 @31174 has 29 MA's), (Start: 21 @31168 has 1 MA's), (24, 31150), (Start: 31 @31054 has 10 MA's), (33, 31015), (38, 30889),

Gene: SamW_29 Start: 26130, Stop: 25825, Start Num: 37
Candidate Starts for SamW_29:
(14, 26448), (27, 26271), (29, 26268), (Start: 37 @26130 has 3 MA's), (39, 26067), (42, 26043), (45, 25998), (46, 25863),

Gene: Sashimi_51 Start: 32407, Stop: 32033, Start Num: 20
Candidate Starts for Sashimi_51:
(6, 32572), (10, 32530), (11, 32494), (12, 32488), (13, 32473), (Start: 15 @32455 has 5 MA's), (Start: 20 @32407 has 29 MA's), (Start: 21 @32401 has 1 MA's), (24, 32383), (28, 32302), (Start: 31 @32287 has 10 MA's), (33, 32248), (35, 32182), (38, 32122),

Gene: Satrap_52 Start: 31659, Stop: 31237, Start Num: 15
Candidate Starts for Satrap_52:
(7, 31755), (10, 31734), (11, 31698), (12, 31692), (13, 31677), (Start: 15 @31659 has 5 MA's), (16, 31653), (Start: 20 @31611 has 29 MA's), (Start: 21 @31605 has 1 MA's), (30, 31494), (Start: 31 @31491 has 10 MA's), (33, 31452), (35, 31386), (36, 31377), (38, 31326),

Gene: Seahorse_54 Start: 33286, Stop: 33032, Start Num: 31
Candidate Starts for Seahorse_54:
(9, 33532), (11, 33493), (12, 33487), (13, 33472), (Start: 15 @33454 has 5 MA's), (Start: 20 @33406 has 29 MA's), (Start: 21 @33400 has 1 MA's), (28, 33301), (Start: 31 @33286 has 10 MA's), (33, 33247), (38, 33121), (40, 33091),

Gene: SonDevVon_54 Start: 31657, Stop: 31403, Start Num: 31
Candidate Starts for SonDevVon_54:
(10, 31900), (11, 31864), (12, 31858), (13, 31843), (Start: 15 @31825 has 5 MA's), (Start: 20 @31777 has 29 MA's), (Start: 21 @31771 has 1 MA's), (24, 31753), (28, 31672), (30, 31660), (Start: 31 @31657 has 10 MA's), (33, 31618), (36, 31543), (38, 31492),

Gene: SpicyFrank_54 Start: 32252, Stop: 31878, Start Num: 20
Candidate Starts for SpicyFrank_54:
(11, 32339), (12, 32333), (13, 32318), (Start: 15 @32300 has 5 MA's), (16, 32294), (Start: 20 @32252 has 29 MA's), (Start: 21 @32246 has 1 MA's), (28, 32147), (Start: 31 @32132 has 10 MA's), (32, 32099), (38, 31967),

Gene: Sporco_52 Start: 31253, Stop: 30879, Start Num: 20
Candidate Starts for Sporco_52:
(10, 31376), (11, 31340), (12, 31334), (13, 31319), (Start: 15 @31301 has 5 MA's), (Start: 20 @31253 has 29 MA's), (Start: 21 @31247 has 1 MA's), (28, 31148), (Start: 31 @31133 has 10 MA's), (33, 31094), (38, 30968),

Gene: ThayneTheZag_52 Start: 31248, Stop: 30874, Start Num: 20
Candidate Starts for ThayneTheZag_52:
(9, 31374), (10, 31371), (11, 31335), (12, 31329), (13, 31314), (Start: 15 @31296 has 5 MA's), (16, 31290), (Start: 20 @31248 has 29 MA's), (Start: 21 @31242 has 1 MA's), (28, 31143), (Start: 31 @31128 has 10 MA's), (38, 30963),

Gene: Tiff81_47 Start: 29579, Stop: 29211, Start Num: 21
Candidate Starts for Tiff81_47:
(9, 29711), (11, 29672), (12, 29666), (13, 29651), (Start: 15 @29633 has 5 MA's), (Start: 20 @29585 has 29 MA's), (Start: 21 @29579 has 1 MA's), (22, 29573), (28, 29480), (30, 29468), (Start: 31 @29465 has 10 MA's), (33, 29426), (36, 29351), (38, 29300),

Gene: TripleJ_39 Start: 28726, Stop: 28325, Start Num: 17
Candidate Starts for TripleJ_39:
(Start: 17 @28726 has 1 MA's), (Start: 19 @28711 has 1 MA's), (Start: 20 @28699 has 29 MA's), (26, 28624), (34, 28510), (38, 28414),

Gene: Troy_29 Start: 26130, Stop: 25825, Start Num: 37
Candidate Starts for Troy_29:
(14, 26448), (27, 26271), (29, 26268), (Start: 37 @26130 has 3 MA's), (39, 26067), (42, 26043), (45, 25998), (46, 25863),

Gene: Vopal_53 Start: 34301, Stop: 33927, Start Num: 20
Candidate Starts for Vopal_53:
(11, 34388), (12, 34382), (13, 34367), (Start: 15 @34349 has 5 MA's), (16, 34343), (Start: 20 @34301 has 29 MA's), (Start: 21 @34295 has 1 MA's), (28, 34196), (Start: 31 @34181 has 10 MA's), (33, 34142), (38, 34016),

Gene: Windest_52 Start: 30333, Stop: 29959, Start Num: 20
Candidate Starts for Windest_52:
(4, 30516), (10, 30456), (11, 30420), (12, 30414), (13, 30399), (Start: 15 @30381 has 5 MA's), (Start: 20 @30333 has 29 MA's), (Start: 21 @30327 has 1 MA's), (24, 30309), (30, 30216), (Start: 31 @30213 has 10 MA's), (33, 30174), (38, 30048),

Gene: YoungHarleezy_51 Start: 31638, Stop: 31264, Start Num: 20
Candidate Starts for YoungHarleezy_51:
(10, 31761), (11, 31725), (12, 31719), (13, 31704), (Start: 15 @31686 has 5 MA's), (Start: 20 @31638 has 29 MA's), (Start: 21 @31632 has 1 MA's), (24, 31614), (30, 31521), (Start: 31 @31518 has 10 MA's), (33, 31479), (38, 31353),