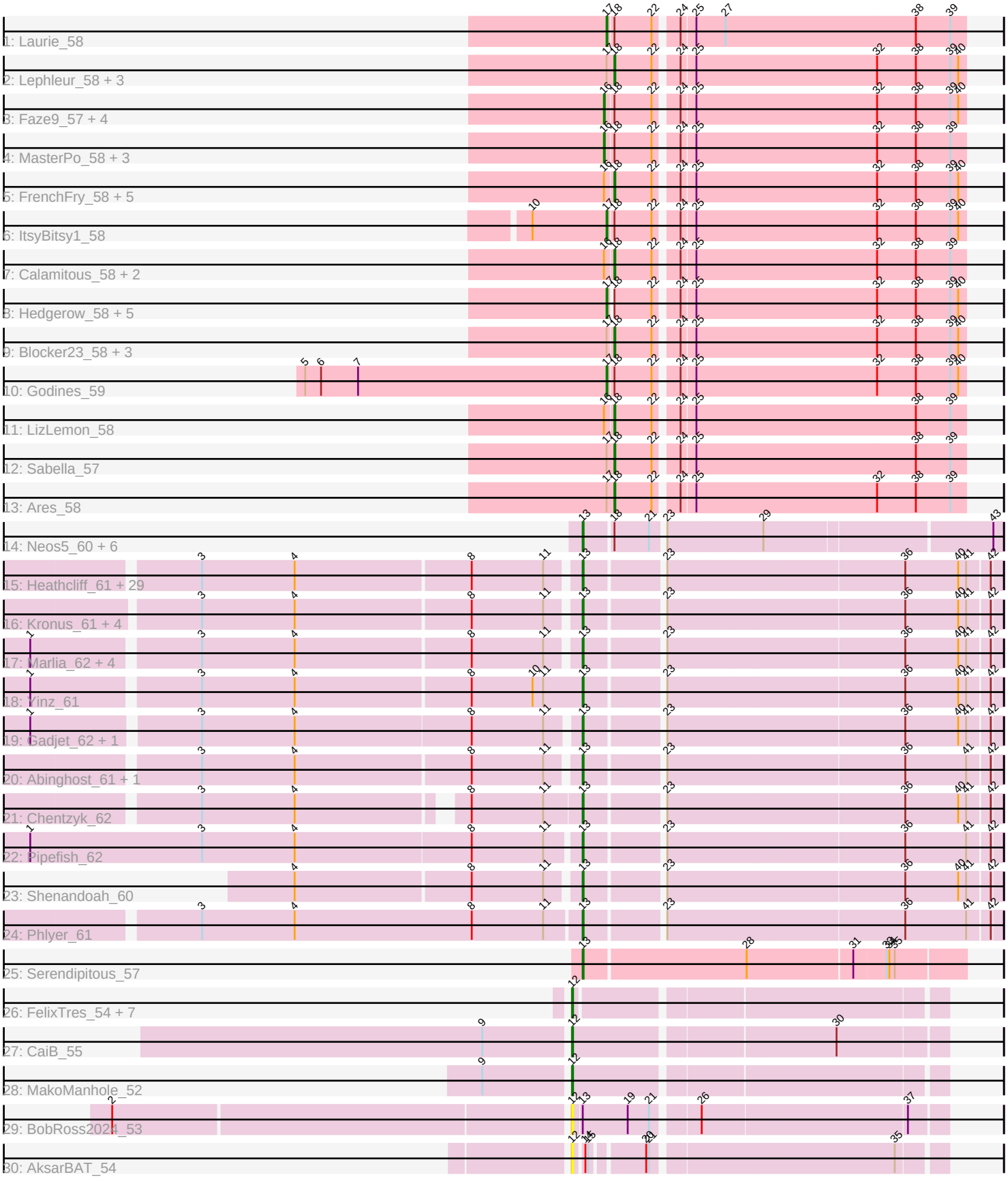
Pham 347443


1: Laurie_58
2: Lephleur_58 + 3
3: Faze9_57 + 4
4: MasterPo_58 + 3
5: FrenchFry_58 + 5
6: ItsyBitsy1_58
7: Calamitous_58 + 2
8: Hedgerow_58 + 5
9: Blocker23_58 + 3
10: Godines_59
11: LizLemon_58
12: Sabella_57
13: Ares_58
14: Neos5_60 + 6
15: Heathcliff_61 + 29
16: Kronus_61 + 4
17: Marlia_62 + 4
18: Vinz_61
19: Gadjet_62 + 1
20: Abinghost_61 + 1
21: Chentzyk_62
22: Pipefish_62
23: Shenandoah_60
24: Phlyer_61
25: Serendipitous_57
26: FelixTres_54 + 7
27: CaiB_55
28: MakoManhole_52
29: BobRoss2024_53
30: AksarBAT_54

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 347443 Report

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

Pham number 347443 has 107 members, 8 are drafts.

Phages represented in each track:
• Track 1 : Laurie_58
• Track 2 : Lephleur_58, West99_58, Tinciduntsolum_59, Brownie5_58
• Track 3 : Faze9_57, Phantasmagoria_58, Eaglehorse_58, PrinceCharming_58, Allegro_58
• Track 4 : MasterPo_58, Kolhan_58, LilSmirk_58, Coffee_58
• Track 5 : FrenchFry_58, Bananafish_58, Lars_58, Qyrzula_53, Glass_58, Opia_58
• Track 6 : ItsyBitsy1_58
• Track 7 : Calamitous_58, Vic9_00058, Holeinone_58
• Track 8 : Hedgerow_58, TA17A_59, Tres_58, Kaleb_58, Rhinoforte_58, Rosebush_57
• Track 9 : Blocker23_58, Boyle_58, Kheth_58, Arbiter_57
• Track 10 : Godines_59
• Track 11 : LizLemon_58
• Track 12 : Sabella_57
• Track 13 : Ares_58
• Track 14 : Neos5_60, Marley1013_61, Tydolla_58, Baloo_60, Morty007_60, LestyG_59, Yahalom_59
• Track 15 : Heathcliff_61, SynergyX_61, Philly_60, Olivio_61, MmasiCarm_62, Chandler_61, Compostia_61, Corofin_61, Chalmers_60, Deenasa_61, Kamiyu_61, Phaedrus_57, Obutu_62, Jackstina_57, Nozo_61, GlenHope_62, RagingRooster_60, Mulaychimus_62, OrangeOswald_61, Athena_63, Gervas_62, RomaT_61, Audrey_61, SlippinJimmy_63, ChaChing_61, Akoma_61, HarveySr_60, Devonte_60, Glubnar_62, Rita1961_62
• Track 16 : Kronus_61, Bernardo_62, Mortcellus_61, Ben11_61, TinyTerror_62
• Track 17 : Marlia_62, Casbah_61, Briakila_60, Phayeta_63, SwainyDoc_62
• Track 18 : Yinz_61
• Track 19 : Gadjet_62, Halfpint_60
• Track 20 : Abinghost_61, Daisy_60
• Track 21 : Chentzyk_62
• Track 22 : Pipefish_62
• Track 23 : Shenandoah_60
• Track 24 : Phlyer_61
• Track 25 : Serendipitous_57
• Track 26 : FelixTres_54, MossRose_54, TraderJ_55, CloverMinnie_54, Blackpen_54, AnarQue_55, Wooper_55, Yeshua_55
• Track 27 : CaiB_55
• Track 28 : MakoManhole_52

• Track 29 : BobRoss2024_53
• Track 30 : AksarBAT_54

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

The start number called the most often in the published annotations is 13, it was called in 54 of the 99 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Abinghost_61, Akoma_61, Athena_63, Audrey_61, Baloo_60, Ben11_61, Bernardo_62, Briakila_60, Casbah_61, ChaChing_61, Chalmers_60, Chandler_61, Chentzyk_62, Compostia_61, Corofin_61, Daisy_60, Deenasa_61, Devonte_60, Gadjet_62, Gervas_62, GlenHope_62, Glubnar_62, Halfpint_60, HarveySr_60, Heathcliff_61, Jackstina_57, Kamiyu_61, Kronus_61, LestyG_59, Marley1013_61, Marlia_62, MmasiCarm_62, Mortcellus_61, Morty007_60, Mulaychimus_62, Neos5_60, Nozo_61, Obutu_62, Olivio_61, OrangeOswald_61, Phaedrus_57, Phayeta_63, Philly_60, Phlyer_61, Pipefish_62, RagingRooster_60, Rita1961_62, RomaT_61, Serendipitous_57, Shenandoah_60, SlippinJimmy_63, SwainyDoc_62, SynergyX_61, TinyTerror_62, Tydolla_58, Yahalom_59, Yinz_61,

Genes that have the "Most Annotated" start but do not call it:
• BobRoss2024_53,

Genes that do not have the "Most Annotated" start:
• AksarBAT_54, Allegro_58, AnarQue_55, Arbiter_57, Ares_58, Bananafish_58, Blackpen_54, Blocker23_58, Boyle_58, Brownie5_58, CaiB_55, Calamitous_58, CloverMinnie_54, Coffee_58, Eaglehorse_58, Faze9_57, FelixTres_54, FrenchFry_58, Glass_58, Godines_59, Hedgerow_58, Holeinone_58, ItsyBitsy1_58, Kaleb_58, Kheth_58, Kolhan_58, Lars_58, Laurie_58, Lephleur_58, LilSmirk_58, LizLemon_58, MakoManhole_52, MasterPo_58, MossRose_54, Opia_58, Phantasmagoria_58, PrinceCharming_58, Qyrzula_53, Rhinoforte_58, Rosebush_57, Sabella_57, TA17A_59, Tinciduntsolum_59, TraderJ_55, Tres_58, Vic9_00058, West99_58, Wooper_55, Yeshua_55,

Summary by start number:

Start 12:
• Found in 12 of 107 (11.2%) of genes in pham
• Manual Annotations of this start: 8 of 99
• Called 100.0% of time when present
• Phage (with cluster) where this start called: AksarBAT_54 (DR), AnarQue_55 (DR), Blackpen_54 (DR), BobRoss2024_53 (DR), CaiB_55 (DR), CloverMinnie_54 (DR), FelixTres_54 (DR), MakoManhole_52 (DR), MossRose_54 (DR), TraderJ_55 (DR), Wooper_55 (DR), Yeshua_55 (DR),

Start 13:
• Found in 58 of 107 (54.2%) of genes in pham
• Manual Annotations of this start: 54 of 99
• Called 98.3% of time when present

• Phage (with cluster) where this start called: Abinghost_61 (B3), Akoma_61 (B3), Athena_63 (B3), Audrey_61 (B3), Baloo_60 (B3), Ben11_61 (B3), Bernardo_62 (B3), Briakila_60 (B3), Casbah_61 (B3), ChaChing_61 (B3), Chalmers_60 (B3), Chandler_61 (B3), Chentzyk_62 (B3), Compostia_61 (B3), Corofin_61 (B3), Daisy_60 (B3), Deenasa_61 (B3), Devonte_60 (B3), Gadjet_62 (B3), Gervas_62 (B3), GlenHope_62 (B3), Glubnar_62 (B3), Halfpint_60 (B3), HarveySr_60 (B3), Heathcliff_61 (B3), Jackstina_57 (B3), Kamiyu_61 (B3), Kronus_61 (B3), LestyG_59 (B3), Marley1013_61 (B3), Marlia_62 (B3), MmasiCarm_62 (B3), Mortcellus_61 (B3), Morty007_60 (B3), Mulaychimus_62 (B3), Neos5_60 (B3), Nozo_61 (B3), Obutu_62 (B3), Olivio_61 (B3), OrangeOswald_61 (B3), Phaedrus_57 (B3), Phayeta_63 (B3), Philly_60 (B3), Phlyer_61 (B3), Pipefish_62 (B3), RagingRooster_60 (B3), Rita1961_62 (B3), RomaT_61 (B3), Serendipitous_57 (B5), Shenandoah_60 (B3), SlippinJimmy_63 (B3), SwainyDoc_62 (B3), SynergyX_61 (B3), TinyTerror_62 (B3), Tydolla_58 (B3), Yahalom_59 (B3), Yinz_61 (B3),

Start 16:
• Found in 19 of 107 (17.8%) of genes in pham
• Manual Annotations of this start: 8 of 99
• Called 47.4% of time when present
• Phage (with cluster) where this start called: Allegro_58 (B2), Coffee_58 (B2), Eaglehorse_58 (B2), Faze9_57 (B2), Kolhan_58 (B2), LilSmirk_58 (B2), MasterPo_58 (B2), Phantasmagoria_58 (B2), PrinceCharming_58 (B2),

Start 17:
• Found in 19 of 107 (17.8%) of genes in pham
• Manual Annotations of this start: 9 of 99
• Called 47.4% of time when present
• Phage (with cluster) where this start called: Godines_59 (B2), Hedgerow_58 (B2), ItsyBitsy1_58 (B2), Kaleb_58 (B2), Laurie_58 (B2), Rhinoforte_58 (B2), Rosebush_57 (B2), TA17A_59 (B2), Tres_58 (B2),

Start 18:
• Found in 45 of 107 (42.1%) of genes in pham
• Manual Annotations of this start: 20 of 99
• Called 44.4% of time when present
• Phage (with cluster) where this start called: Arbiter_57 (B2), Ares_58 (B2), Bananafish_58 (B2), Blocker23_58 (B2), Boyle_58 (B2), Brownie5_58 (B2), Calamitous_58 (B2), FrenchFry_58 (B2), Glass_58 (B2), Holeinone_58 (B2), Kheth_58 (B2), Lars_58 (B2), Lephleur_58 (B2), LizLemon_58 (B2), Opia_58 (B2), Qyrzula_53 (B2), Sabella_57 (B2), Tinciduntsolum_59 (B2), Vic9_00058 (B2), West99_58 (B2),

Summary by clusters:

There are 4 clusters represented in this pham: B5, DR, B2, B3,

Info for manual annotations of cluster B2:
•Start number 16 was manually annotated 8 times for cluster B2.
•Start number 17 was manually annotated 9 times for cluster B2.
•Start number 18 was manually annotated 20 times for cluster B2.

Info for manual annotations of cluster B3:
•Start number 13 was manually annotated 53 times for cluster B3.

Info for manual annotations of cluster B5:
•Start number 13 was manually annotated 1 time for cluster B5.

Info for manual annotations of cluster DR:
•Start number 12 was manually annotated 8 times for cluster DR.

Gene Information:

Gene: Abinghost_61 Start: 54489, Stop: 54043, Start Num: 13
Candidate Starts for Abinghost_61:
(3, 54903), (4, 54798), (8, 54603), (11, 54522), (Start: 13 @54489 has 54 MA's), (23, 54408), (36, 54147), (41, 54078), (42, 54054),

Gene: Akoma_61 Start: 54537, Stop: 54091, Start Num: 13
Candidate Starts for Akoma_61:
(3, 54951), (4, 54846), (8, 54651), (11, 54570), (Start: 13 @54537 has 54 MA's), (23, 54456), (36, 54195), (40, 54135), (41, 54126), (42, 54102),

Gene: AksarBAT_54 Start: 47539, Stop: 47165, Start Num: 12
Candidate Starts for AksarBAT_54:
(Start: 12 @47539 has 8 MA's), (14, 47530), (15, 47527), (20, 47476), (21, 47473), (35, 47215),

Gene: Allegro_58 Start: 52863, Stop: 52474, Start Num: 16
Candidate Starts for Allegro_58:
(Start: 16 @52863 has 8 MA's), (Start: 18 @52854 has 20 MA's), (22, 52812), (24, 52791), (25, 52776), (32, 52572), (38, 52530), (39, 52491), (40, 52482),

Gene: AnarQue_55 Start: 48400, Stop: 48017, Start Num: 12
Candidate Starts for AnarQue_55:
(Start: 12 @48400 has 8 MA's),

Gene: Arbiter_57 Start: 52966, Stop: 52586, Start Num: 18
Candidate Starts for Arbiter_57:
(Start: 17 @52972 has 9 MA's), (Start: 18 @52966 has 20 MA's), (22, 52924), (24, 52903), (25, 52888), (32, 52684), (38, 52642), (39, 52603), (40, 52594),

Gene: Ares_58 Start: 52938, Stop: 52558, Start Num: 18
Candidate Starts for Ares_58:
(Start: 17 @52941 has 9 MA's), (Start: 18 @52938 has 20 MA's), (22, 52896), (24, 52875), (25, 52860), (32, 52656), (38, 52614), (39, 52575),

Gene: Athena_63 Start: 55272, Stop: 54826, Start Num: 13
Candidate Starts for Athena_63:
(3, 55686), (4, 55581), (8, 55386), (11, 55305), (Start: 13 @55272 has 54 MA's), (23, 55191), (36, 54930), (40, 54870), (41, 54861), (42, 54837),

Gene: Audrey_61 Start: 54528, Stop: 54082, Start Num: 13
Candidate Starts for Audrey_61:
(3, 54942), (4, 54837), (8, 54642), (11, 54561), (Start: 13 @54528 has 54 MA's), (23, 54447), (36, 54186), (40, 54126), (41, 54117), (42, 54093),

Gene: Baloo_60 Start: 54388, Stop: 53945, Start Num: 13
Candidate Starts for Baloo_60:
(Start: 13 @54388 has 54 MA's), (Start: 18 @54358 has 20 MA's), (21, 54319), (23, 54307), (29, 54202), (43, 53956),

Gene: Bananafish_58 Start: 52866, Stop: 52486, Start Num: 18
Candidate Starts for Bananafish_58:
(Start: 16 @52875 has 8 MA's), (Start: 18 @52866 has 20 MA's), (22, 52824), (24, 52803), (25, 52788), (32, 52584), (38, 52542), (39, 52503), (40, 52494),

Gene: Ben11_61 Start: 54743, Stop: 54297, Start Num: 13
Candidate Starts for Ben11_61:
(3, 55157), (4, 55052), (8, 54857), (11, 54776), (Start: 13 @54743 has 54 MA's), (23, 54662), (36, 54401), (40, 54341), (41, 54332), (42, 54308),

Gene: Bernardo_62 Start: 54880, Stop: 54434, Start Num: 13
Candidate Starts for Bernardo_62:
(3, 55297), (4, 55192), (8, 54994), (11, 54913), (Start: 13 @54880 has 54 MA's), (23, 54799), (36, 54538), (40, 54478), (41, 54469), (42, 54445),

Gene: Blackpen_54 Start: 47469, Stop: 47086, Start Num: 12
Candidate Starts for Blackpen_54:
(Start: 12 @47469 has 8 MA's),

Gene: Blocker23_58 Start: 52976, Stop: 52596, Start Num: 18
Candidate Starts for Blocker23_58:
(Start: 17 @52982 has 9 MA's), (Start: 18 @52976 has 20 MA's), (22, 52934), (24, 52913), (25, 52898), (32, 52694), (38, 52652), (39, 52613), (40, 52604),

Gene: BobRoss2024_53 Start: 46786, Stop: 46394, Start Num: 12
Candidate Starts for BobRoss2024_53:
(2, 47287), (Start: 12 @46786 has 8 MA's), (Start: 13 @46777 has 54 MA's), (19, 46726), (21, 46702), (26, 46657), (37, 46435),

Gene: Boyle_58 Start: 53005, Stop: 52625, Start Num: 18
Candidate Starts for Boyle_58:
(Start: 17 @53011 has 9 MA's), (Start: 18 @53005 has 20 MA's), (22, 52963), (24, 52942), (25, 52927), (32, 52723), (38, 52681), (39, 52642), (40, 52633),

Gene: Briakila_60 Start: 54501, Stop: 54055, Start Num: 13
Candidate Starts for Briakila_60:
(1, 55095), (3, 54915), (4, 54810), (8, 54615), (11, 54534), (Start: 13 @54501 has 54 MA's), (23, 54420), (36, 54159), (40, 54099), (41, 54090), (42, 54066),

Gene: Brownie5_58 Start: 53018, Stop: 52638, Start Num: 18
Candidate Starts for Brownie5_58:
(Start: 17 @53021 has 9 MA's), (Start: 18 @53018 has 20 MA's), (22, 52976), (24, 52955), (25, 52940), (32, 52736), (38, 52694), (39, 52655), (40, 52646),

Gene: CaiB_55 Start: 48933, Stop: 48541, Start Num: 12
Candidate Starts for CaiB_55:
(9, 49026), (Start: 12 @48933 has 8 MA's), (30, 48660),

Gene: Calamitous_58 Start: 52865, Stop: 52485, Start Num: 18
Candidate Starts for Calamitous_58:
(Start: 16 @52874 has 8 MA's), (Start: 18 @52865 has 20 MA's), (22, 52823), (24, 52802), (25, 52787), (32, 52583), (38, 52541), (39, 52502),

Gene: Casbah_61 Start: 54846, Stop: 54400, Start Num: 13
Candidate Starts for Casbah_61:
(1, 55440), (3, 55260), (4, 55155), (8, 54960), (11, 54879), (Start: 13 @54846 has 54 MA's), (23, 54765), (36, 54504), (40, 54444), (41, 54435), (42, 54411),

Gene: ChaChing_61 Start: 54548, Stop: 54102, Start Num: 13
Candidate Starts for ChaChing_61:
(3, 54962), (4, 54857), (8, 54662), (11, 54581), (Start: 13 @54548 has 54 MA's), (23, 54467), (36, 54206), (40, 54146), (41, 54137), (42, 54113),

Gene: Chalmers_60 Start: 54987, Stop: 54541, Start Num: 13
Candidate Starts for Chalmers_60:
(3, 55401), (4, 55296), (8, 55101), (11, 55020), (Start: 13 @54987 has 54 MA's), (23, 54906), (36, 54645), (40, 54585), (41, 54576), (42, 54552),

Gene: Chandler_61 Start: 55316, Stop: 54870, Start Num: 13
Candidate Starts for Chandler_61:
(3, 55730), (4, 55625), (8, 55430), (11, 55349), (Start: 13 @55316 has 54 MA's), (23, 55235), (36, 54974), (40, 54914), (41, 54905), (42, 54881),

Gene: Chentzyk_62 Start: 55268, Stop: 54822, Start Num: 13
Candidate Starts for Chentzyk_62:
(3, 55667), (4, 55562), (8, 55391), (11, 55310), (Start: 13 @55268 has 54 MA's), (23, 55187), (36, 54926), (40, 54866), (41, 54857), (42, 54833),

Gene: CloverMinnie_54 Start: 47977, Stop: 47594, Start Num: 12
Candidate Starts for CloverMinnie_54:
(Start: 12 @47977 has 8 MA's),

Gene: Coffee_58 Start: 52986, Stop: 52597, Start Num: 16
Candidate Starts for Coffee_58:
(Start: 16 @52986 has 8 MA's), (Start: 18 @52977 has 20 MA's), (22, 52935), (24, 52914), (25, 52899), (32, 52695), (38, 52653), (39, 52614),

Gene: Compostia_61 Start: 54935, Stop: 54489, Start Num: 13
Candidate Starts for Compostia_61:
(3, 55349), (4, 55244), (8, 55049), (11, 54968), (Start: 13 @54935 has 54 MA's), (23, 54854), (36, 54593), (40, 54533), (41, 54524), (42, 54500),

Gene: Corofin_61 Start: 54559, Stop: 54113, Start Num: 13
Candidate Starts for Corofin_61:
(3, 54973), (4, 54868), (8, 54673), (11, 54592), (Start: 13 @54559 has 54 MA's), (23, 54478), (36, 54217), (40, 54157), (41, 54148), (42, 54124),

Gene: Daisy_60 Start: 54092, Stop: 53646, Start Num: 13
Candidate Starts for Daisy_60:

(3, 54506), (4, 54401), (8, 54206), (11, 54125), (Start: 13 @54092 has 54 MA's), (23, 54011), (36, 53750), (41, 53681), (42, 53657),

Gene: Deenasa_61 Start: 55397, Stop: 54951, Start Num: 13
Candidate Starts for Deenasa_61:
(3, 55811), (4, 55706), (8, 55511), (11, 55430), (Start: 13 @55397 has 54 MA's), (23, 55316), (36, 55055), (40, 54995), (41, 54986), (42, 54962),

Gene: Devonte_60 Start: 54171, Stop: 53725, Start Num: 13
Candidate Starts for Devonte_60:
(3, 54585), (4, 54480), (8, 54285), (11, 54204), (Start: 13 @54171 has 54 MA's), (23, 54090), (36, 53829), (40, 53769), (41, 53760), (42, 53736),

Gene: Eaglehorse_58 Start: 52924, Stop: 52535, Start Num: 16
Candidate Starts for Eaglehorse_58:
(Start: 16 @52924 has 8 MA's), (Start: 18 @52915 has 20 MA's), (22, 52873), (24, 52852), (25, 52837), (32, 52633), (38, 52591), (39, 52552), (40, 52543),

Gene: Faze9_57 Start: 53009, Stop: 52620, Start Num: 16
Candidate Starts for Faze9_57:
(Start: 16 @53009 has 8 MA's), (Start: 18 @53000 has 20 MA's), (22, 52958), (24, 52937), (25, 52922), (32, 52718), (38, 52676), (39, 52637), (40, 52628),

Gene: FelixTres_54 Start: 48015, Stop: 47632, Start Num: 12
Candidate Starts for FelixTres_54:
(Start: 12 @48015 has 8 MA's),

Gene: FrenchFry_58 Start: 52976, Stop: 52596, Start Num: 18
Candidate Starts for FrenchFry_58:
(Start: 16 @52985 has 8 MA's), (Start: 18 @52976 has 20 MA's), (22, 52934), (24, 52913), (25, 52898), (32, 52694), (38, 52652), (39, 52613), (40, 52604),

Gene: Gadjet_62 Start: 54864, Stop: 54418, Start Num: 13
Candidate Starts for Gadjet_62:
(1, 55461), (3, 55281), (4, 55176), (8, 54978), (11, 54897), (Start: 13 @54864 has 54 MA's), (23, 54783), (36, 54522), (40, 54462), (41, 54453), (42, 54429),

Gene: Gervas_62 Start: 54953, Stop: 54507, Start Num: 13
Candidate Starts for Gervas_62:
(3, 55367), (4, 55262), (8, 55067), (11, 54986), (Start: 13 @54953 has 54 MA's), (23, 54872), (36, 54611), (40, 54551), (41, 54542), (42, 54518),

Gene: Glass_58 Start: 52978, Stop: 52598, Start Num: 18
Candidate Starts for Glass_58:
(Start: 16 @52987 has 8 MA's), (Start: 18 @52978 has 20 MA's), (22, 52936), (24, 52915), (25, 52900), (32, 52696), (38, 52654), (39, 52615), (40, 52606),

Gene: GlenHope_62 Start: 54527, Stop: 54081, Start Num: 13
Candidate Starts for GlenHope_62:
(3, 54941), (4, 54836), (8, 54641), (11, 54560), (Start: 13 @54527 has 54 MA's), (23, 54446), (36, 54185), (40, 54125), (41, 54116), (42, 54092),

Gene: Glubnar_62 Start: 54433, Stop: 53987, Start Num: 13

Candidate Starts for Glubnar_62:
(3, 54847), (4, 54742), (8, 54547), (11, 54466), (Start: 13 @54433 has 54 MA's), (23, 54352), (36, 54091), (40, 54031), (41, 54022), (42, 53998),

Gene: Godines_59 Start: 53267, Stop: 52881, Start Num: 17
Candidate Starts for Godines_59:
(5, 53609), (6, 53591), (7, 53549), (Start: 17 @53267 has 9 MA's), (Start: 18 @53261 has 20 MA's), (22, 53219), (24, 53198), (25, 53183), (32, 52979), (38, 52937), (39, 52898), (40, 52889),

Gene: Halfpint_60 Start: 54267, Stop: 53821, Start Num: 13
Candidate Starts for Halfpint_60:
(1, 54864), (3, 54684), (4, 54579), (8, 54384), (11, 54303), (Start: 13 @54267 has 54 MA's), (23, 54186), (36, 53925), (40, 53865), (41, 53856), (42, 53832),

Gene: HarveySr_60 Start: 54117, Stop: 53671, Start Num: 13
Candidate Starts for HarveySr_60:
(3, 54531), (4, 54426), (8, 54231), (11, 54150), (Start: 13 @54117 has 54 MA's), (23, 54036), (36, 53775), (40, 53715), (41, 53706), (42, 53682),

Gene: Heathcliff_61 Start: 54494, Stop: 54048, Start Num: 13
Candidate Starts for Heathcliff_61:
(3, 54908), (4, 54803), (8, 54608), (11, 54527), (Start: 13 @54494 has 54 MA's), (23, 54413), (36, 54152), (40, 54092), (41, 54083), (42, 54059),

Gene: Hedgerow_58 Start: 52996, Stop: 52613, Start Num: 17
Candidate Starts for Hedgerow_58:
(Start: 17 @52996 has 9 MA's), (Start: 18 @52993 has 20 MA's), (22, 52951), (24, 52930), (25, 52915), (32, 52711), (38, 52669), (39, 52630), (40, 52621),

Gene: Holeinone_58 Start: 52832, Stop: 52452, Start Num: 18
Candidate Starts for Holeinone_58:
(Start: 16 @52841 has 8 MA's), (Start: 18 @52832 has 20 MA's), (22, 52790), (24, 52769), (25, 52754), (32, 52550), (38, 52508), (39, 52469),

Gene: ItsyBitsy1_58 Start: 52861, Stop: 52475, Start Num: 17
Candidate Starts for ItsyBitsy1_58:
(10, 52945), (Start: 17 @52861 has 9 MA's), (Start: 18 @52855 has 20 MA's), (22, 52813), (24, 52792), (25, 52777), (32, 52573), (38, 52531), (39, 52492), (40, 52483),

Gene: Jackstina_57 Start: 54419, Stop: 53973, Start Num: 13
Candidate Starts for Jackstina_57:
(3, 54833), (4, 54728), (8, 54533), (11, 54452), (Start: 13 @54419 has 54 MA's), (23, 54338), (36, 54077), (40, 54017), (41, 54008), (42, 53984),

Gene: Kaleb_58 Start: 53020, Stop: 52634, Start Num: 17
Candidate Starts for Kaleb_58:
(Start: 17 @53020 has 9 MA's), (Start: 18 @53014 has 20 MA's), (22, 52972), (24, 52951), (25, 52936), (32, 52732), (38, 52690), (39, 52651), (40, 52642),

Gene: Kamiyu_61 Start: 54496, Stop: 54050, Start Num: 13
Candidate Starts for Kamiyu_61:
(3, 54910), (4, 54805), (8, 54610), (11, 54529), (Start: 13 @54496 has 54 MA's), (23, 54415), (36, 54154), (40, 54094), (41, 54085), (42, 54061),

Gene: Kheth_58 Start: 52897, Stop: 52517, Start Num: 18
Candidate Starts for Kheth_58:
(Start: 17 @52903 has 9 MA's), (Start: 18 @52897 has 20 MA's), (22, 52855), (24, 52834), (25, 52819), (32, 52615), (38, 52573), (39, 52534), (40, 52525),

Gene: Kolhan_58 Start: 52873, Stop: 52484, Start Num: 16
Candidate Starts for Kolhan_58:
(Start: 16 @52873 has 8 MA's), (Start: 18 @52864 has 20 MA's), (22, 52822), (24, 52801), (25, 52786), (32, 52582), (38, 52540), (39, 52501),

Gene: Kronus_61 Start: 55581, Stop: 55135, Start Num: 13
Candidate Starts for Kronus_61:
(3, 55995), (4, 55890), (8, 55695), (11, 55614), (Start: 13 @55581 has 54 MA's), (23, 55500), (36, 55239), (40, 55179), (41, 55170), (42, 55146),

Gene: Lars_58 Start: 52962, Stop: 52582, Start Num: 18
Candidate Starts for Lars_58:
(Start: 16 @52971 has 8 MA's), (Start: 18 @52962 has 20 MA's), (22, 52920), (24, 52899), (25, 52884), (32, 52680), (38, 52638), (39, 52599), (40, 52590),

Gene: Laurie_58 Start: 52695, Stop: 52309, Start Num: 17
Candidate Starts for Laurie_58:
(Start: 17 @52695 has 9 MA's), (Start: 18 @52689 has 20 MA's), (22, 52647), (24, 52626), (25, 52611), (27, 52578), (38, 52365), (39, 52326),

Gene: Lephleur_58 Start: 52874, Stop: 52494, Start Num: 18
Candidate Starts for Lephleur_58:
(Start: 17 @52877 has 9 MA's), (Start: 18 @52874 has 20 MA's), (22, 52832), (24, 52811), (25, 52796), (32, 52592), (38, 52550), (39, 52511), (40, 52502),

Gene: LestyG_59 Start: 54041, Stop: 53598, Start Num: 13
Candidate Starts for LestyG_59:
(Start: 13 @54041 has 54 MA's), (Start: 18 @54011 has 20 MA's), (21, 53972), (23, 53960), (29, 53855), (43, 53609),

Gene: LilSmirk_58 Start: 52874, Stop: 52485, Start Num: 16
Candidate Starts for LilSmirk_58:
(Start: 16 @52874 has 8 MA's), (Start: 18 @52865 has 20 MA's), (22, 52823), (24, 52802), (25, 52787), (32, 52583), (38, 52541), (39, 52502),

Gene: LizLemon_58 Start: 52987, Stop: 52607, Start Num: 18
Candidate Starts for LizLemon_58:
(Start: 16 @52996 has 8 MA's), (Start: 18 @52987 has 20 MA's), (22, 52945), (24, 52924), (25, 52909), (38, 52663), (39, 52624),

Gene: MakoManhole_52 Start: 47472, Stop: 47083, Start Num: 12
Candidate Starts for MakoManhole_52:
(9, 47565), (Start: 12 @47472 has 8 MA's),

Gene: Marley1013_61 Start: 55239, Stop: 54796, Start Num: 13
Candidate Starts for Marley1013_61:

(Start: 13 @55239 has 54 MA's), (Start: 18 @55209 has 20 MA's), (21, 55170), (23, 55158), (29, 55053), (43, 54807),

Gene: Marlia_62 Start: 54957, Stop: 54511, Start Num: 13
Candidate Starts for Marlia_62:
(1, 55551), (3, 55371), (4, 55266), (8, 55071), (11, 54990), (Start: 13 @54957 has 54 MA's), (23, 54876), (36, 54615), (40, 54555), (41, 54546), (42, 54522),

Gene: MasterPo_58 Start: 52892, Stop: 52503, Start Num: 16
Candidate Starts for MasterPo_58:
(Start: 16 @52892 has 8 MA's), (Start: 18 @52883 has 20 MA's), (22, 52841), (24, 52820), (25, 52805), (32, 52601), (38, 52559), (39, 52520),

Gene: MmasiCarm_62 Start: 54941, Stop: 54495, Start Num: 13
Candidate Starts for MmasiCarm_62:
(3, 55355), (4, 55250), (8, 55055), (11, 54974), (Start: 13 @54941 has 54 MA's), (23, 54860), (36, 54599), (40, 54539), (41, 54530), (42, 54506),

Gene: Mortcellus_61 Start: 55596, Stop: 55150, Start Num: 13
Candidate Starts for Mortcellus_61:
(3, 56013), (4, 55908), (8, 55713), (11, 55632), (Start: 13 @55596 has 54 MA's), (23, 55515), (36, 55254), (40, 55194), (41, 55185), (42, 55161),

Gene: Morty007_60 Start: 55239, Stop: 54796, Start Num: 13
Candidate Starts for Morty007_60:
(Start: 13 @55239 has 54 MA's), (Start: 18 @55209 has 20 MA's), (21, 55170), (23, 55158), (29, 55053), (43, 54807),

Gene: MossRose_54 Start: 48034, Stop: 47651, Start Num: 12
Candidate Starts for MossRose_54:
(Start: 12 @48034 has 8 MA's),

Gene: Mulaychimus_62 Start: 54958, Stop: 54512, Start Num: 13
Candidate Starts for Mulaychimus_62:
(3, 55372), (4, 55267), (8, 55072), (11, 54991), (Start: 13 @54958 has 54 MA's), (23, 54877), (36, 54616), (40, 54556), (41, 54547), (42, 54523),

Gene: Neos5_60 Start: 54701, Stop: 54258, Start Num: 13
Candidate Starts for Neos5_60:
(Start: 13 @54701 has 54 MA's), (Start: 18 @54671 has 20 MA's), (21, 54632), (23, 54620), (29, 54515), (43, 54269),

Gene: Nozo_61 Start: 55295, Stop: 54849, Start Num: 13
Candidate Starts for Nozo_61:
(3, 55709), (4, 55604), (8, 55409), (11, 55328), (Start: 13 @55295 has 54 MA's), (23, 55214), (36, 54953), (40, 54893), (41, 54884), (42, 54860),

Gene: Obutu_62 Start: 54894, Stop: 54448, Start Num: 13
Candidate Starts for Obutu_62:
(3, 55308), (4, 55203), (8, 55008), (11, 54927), (Start: 13 @54894 has 54 MA's), (23, 54813), (36, 54552), (40, 54492), (41, 54483), (42, 54459),

Gene: Olivio_61 Start: 54753, Stop: 54307, Start Num: 13

Candidate Starts for Olivio_61:
(3, 55167), (4, 55062), (8, 54867), (11, 54786), (Start: 13 @54753 has 54 MA's), (23, 54672), (36, 54411), (40, 54351), (41, 54342), (42, 54318),

Gene: Opia_58 Start: 52877, Stop: 52497, Start Num: 18
Candidate Starts for Opia_58:
(Start: 16 @52886 has 8 MA's), (Start: 18 @52877 has 20 MA's), (22, 52835), (24, 52814), (25, 52799), (32, 52595), (38, 52553), (39, 52514), (40, 52505),

Gene: OrangeOswald_61 Start: 54536, Stop: 54090, Start Num: 13
Candidate Starts for OrangeOswald_61:
(3, 54950), (4, 54845), (8, 54650), (11, 54569), (Start: 13 @54536 has 54 MA's), (23, 54455), (36, 54194), (40, 54134), (41, 54125), (42, 54101),

Gene: Phaedrus_57 Start: 53969, Stop: 53523, Start Num: 13
Candidate Starts for Phaedrus_57:
(3, 54383), (4, 54278), (8, 54083), (11, 54002), (Start: 13 @53969 has 54 MA's), (23, 53888), (36, 53627), (40, 53567), (41, 53558), (42, 53534),

Gene: Phantasmagoria_58 Start: 52884, Stop: 52495, Start Num: 16
Candidate Starts for Phantasmagoria_58:
(Start: 16 @52884 has 8 MA's), (Start: 18 @52875 has 20 MA's), (22, 52833), (24, 52812), (25, 52797), (32, 52593), (38, 52551), (39, 52512), (40, 52503),

Gene: Phayeta_63 Start: 54796, Stop: 54350, Start Num: 13
Candidate Starts for Phayeta_63:
(1, 55390), (3, 55210), (4, 55105), (8, 54910), (11, 54829), (Start: 13 @54796 has 54 MA's), (23, 54715), (36, 54454), (40, 54394), (41, 54385), (42, 54361),

Gene: Philly_60 Start: 54356, Stop: 53910, Start Num: 13
Candidate Starts for Philly_60:
(3, 54770), (4, 54665), (8, 54470), (11, 54389), (Start: 13 @54356 has 54 MA's), (23, 54275), (36, 54014), (40, 53954), (41, 53945), (42, 53921),

Gene: Phlyer_61 Start: 55238, Stop: 54792, Start Num: 13
Candidate Starts for Phlyer_61:
(3, 55664), (4, 55559), (8, 55358), (11, 55277), (Start: 13 @55238 has 54 MA's), (23, 55157), (36, 54896), (41, 54827), (42, 54803),

Gene: Pipefish_62 Start: 55267, Stop: 54821, Start Num: 13
Candidate Starts for Pipefish_62:
(1, 55882), (3, 55687), (4, 55582), (8, 55384), (11, 55303), (Start: 13 @55267 has 54 MA's), (23, 55186), (36, 54925), (41, 54856), (42, 54832),

Gene: PrinceCharming_58 Start: 52980, Stop: 52591, Start Num: 16
Candidate Starts for PrinceCharming_58:
(Start: 16 @52980 has 8 MA's), (Start: 18 @52971 has 20 MA's), (22, 52929), (24, 52908), (25, 52893), (32, 52689), (38, 52647), (39, 52608), (40, 52599),

Gene: Qyrzula_53 Start: 52988, Stop: 52608, Start Num: 18
Candidate Starts for Qyrzula_53:
(Start: 16 @52997 has 8 MA's), (Start: 18 @52988 has 20 MA's), (22, 52946), (24, 52925), (25, 52910), (32, 52706), (38, 52664), (39, 52625), (40, 52616),

Gene: RagingRooster_60 Start: 54184, Stop: 53738, Start Num: 13
Candidate Starts for RagingRooster_60:
(3, 54598), (4, 54493), (8, 54298), (11, 54217), (Start: 13 @54184 has 54 MA's), (23, 54103), (36, 53842), (40, 53782), (41, 53773), (42, 53749),

Gene: Rhinoforte_58 Start: 52990, Stop: 52607, Start Num: 17
Candidate Starts for Rhinoforte_58:
(Start: 17 @52990 has 9 MA's), (Start: 18 @52987 has 20 MA's), (22, 52945), (24, 52924), (25, 52909), (32, 52705), (38, 52663), (39, 52624), (40, 52615),

Gene: Rita1961_62 Start: 54894, Stop: 54448, Start Num: 13
Candidate Starts for Rita1961_62:
(3, 55308), (4, 55203), (8, 55008), (11, 54927), (Start: 13 @54894 has 54 MA's), (23, 54813), (36, 54552), (40, 54492), (41, 54483), (42, 54459),

Gene: RomaT_61 Start: 55093, Stop: 54647, Start Num: 13
Candidate Starts for RomaT_61:
(3, 55507), (4, 55402), (8, 55207), (11, 55126), (Start: 13 @55093 has 54 MA's), (23, 55012), (36, 54751), (40, 54691), (41, 54682), (42, 54658),

Gene: Rosebush_57 Start: 53017, Stop: 52634, Start Num: 17
Candidate Starts for Rosebush_57:
(Start: 17 @53017 has 9 MA's), (Start: 18 @53014 has 20 MA's), (22, 52972), (24, 52951), (25, 52936), (32, 52732), (38, 52690), (39, 52651), (40, 52642),

Gene: Sabella_57 Start: 52859, Stop: 52479, Start Num: 18
Candidate Starts for Sabella_57:
(Start: 17 @52862 has 9 MA's), (Start: 18 @52859 has 20 MA's), (22, 52817), (24, 52796), (25, 52781), (38, 52535), (39, 52496),

Gene: Serendipitous_57 Start: 54156, Stop: 53737, Start Num: 13
Candidate Starts for Serendipitous_57:
(Start: 13 @54156 has 54 MA's), (28, 53976), (31, 53859), (33, 53823), (34, 53820), (35, 53814),

Gene: Shenandoah_60 Start: 54161, Stop: 53715, Start Num: 13
Candidate Starts for Shenandoah_60:
(4, 54470), (8, 54275), (11, 54194), (Start: 13 @54161 has 54 MA's), (23, 54080), (36, 53819), (40, 53759), (41, 53750), (42, 53726),

Gene: SlippinJimmy_63 Start: 55694, Stop: 55248, Start Num: 13
Candidate Starts for SlippinJimmy_63:
(3, 56108), (4, 56003), (8, 55808), (11, 55727), (Start: 13 @55694 has 54 MA's), (23, 55613), (36, 55352), (40, 55292), (41, 55283), (42, 55259),

Gene: SwainyDoc_62 Start: 54923, Stop: 54477, Start Num: 13
Candidate Starts for SwainyDoc_62:
(1, 55517), (3, 55337), (4, 55232), (8, 55037), (11, 54956), (Start: 13 @54923 has 54 MA's), (23, 54842), (36, 54581), (40, 54521), (41, 54512), (42, 54488),

Gene: SynergyX_61 Start: 54533, Stop: 54087, Start Num: 13
Candidate Starts for SynergyX_61:

(3, 54947), (4, 54842), (8, 54647), (11, 54566), (Start: 13 @54533 has 54 MA's), (23, 54452), (36, 54191), (40, 54131), (41, 54122), (42, 54098),

Gene: TA17A_59 Start: 52867, Stop: 52481, Start Num: 17
Candidate Starts for TA17A_59:
(Start: 17 @52867 has 9 MA's), (Start: 18 @52861 has 20 MA's), (22, 52819), (24, 52798), (25, 52783), (32, 52579), (38, 52537), (39, 52498), (40, 52489),

Gene: Tinciduntsolum_59 Start: 53017, Stop: 52637, Start Num: 18
Candidate Starts for Tinciduntsolum_59:
(Start: 17 @53020 has 9 MA's), (Start: 18 @53017 has 20 MA's), (22, 52975), (24, 52954), (25, 52939), (32, 52735), (38, 52693), (39, 52654), (40, 52645),

Gene: TinyTerror_62 Start: 54954, Stop: 54508, Start Num: 13
Candidate Starts for TinyTerror_62:
(3, 55368), (4, 55263), (8, 55068), (11, 54987), (Start: 13 @54954 has 54 MA's), (23, 54873), (36, 54612), (40, 54552), (41, 54543), (42, 54519),

Gene: TraderJ_55 Start: 48357, Stop: 47974, Start Num: 12
Candidate Starts for TraderJ_55:
(Start: 12 @48357 has 8 MA's),

Gene: Tres_58 Start: 52874, Stop: 52491, Start Num: 17
Candidate Starts for Tres_58:
(Start: 17 @52874 has 9 MA's), (Start: 18 @52871 has 20 MA's), (22, 52829), (24, 52808), (25, 52793), (32, 52589), (38, 52547), (39, 52508), (40, 52499),

Gene: Tydolla_58 Start: 54593, Stop: 54150, Start Num: 13
Candidate Starts for Tydolla_58:
(Start: 13 @54593 has 54 MA's), (Start: 18 @54563 has 20 MA's), (21, 54524), (23, 54512), (29, 54407), (43, 54161),

Gene: Vic9_00058 Start: 53713, Stop: 53333, Start Num: 18
Candidate Starts for Vic9_00058:
(Start: 16 @53722 has 8 MA's), (Start: 18 @53713 has 20 MA's), (22, 53671), (24, 53650), (25, 53635), (32, 53431), (38, 53389), (39, 53350),

Gene: West99_58 Start: 53014, Stop: 52634, Start Num: 18
Candidate Starts for West99_58:
(Start: 17 @53017 has 9 MA's), (Start: 18 @53014 has 20 MA's), (22, 52972), (24, 52951), (25, 52936), (32, 52732), (38, 52690), (39, 52651), (40, 52642),

Gene: Wooper_55 Start: 48366, Stop: 47983, Start Num: 12
Candidate Starts for Wooper_55:
(Start: 12 @48366 has 8 MA's),

Gene: Yahalom_59 Start: 54367, Stop: 53924, Start Num: 13
Candidate Starts for Yahalom_59:
(Start: 13 @54367 has 54 MA's), (Start: 18 @54337 has 20 MA's), (21, 54298), (23, 54286), (29, 54181), (43, 53935),

Gene: Yeshua_55 Start: 48343, Stop: 47960, Start Num: 12
Candidate Starts for Yeshua_55:

(Start: 12 @48343 has 8 MA's),

Gene: Yinz_61 Start: 54389, Stop: 53943, Start Num: 13
Candidate Starts for Yinz_61:
(1, 54995), (3, 54815), (4, 54710), (8, 54515), (10, 54446), (11, 54434), (Start: 13 @54389 has 54 MA's), (23, 54308), (36, 54047), (40, 53987), (41, 53978), (42, 53954),