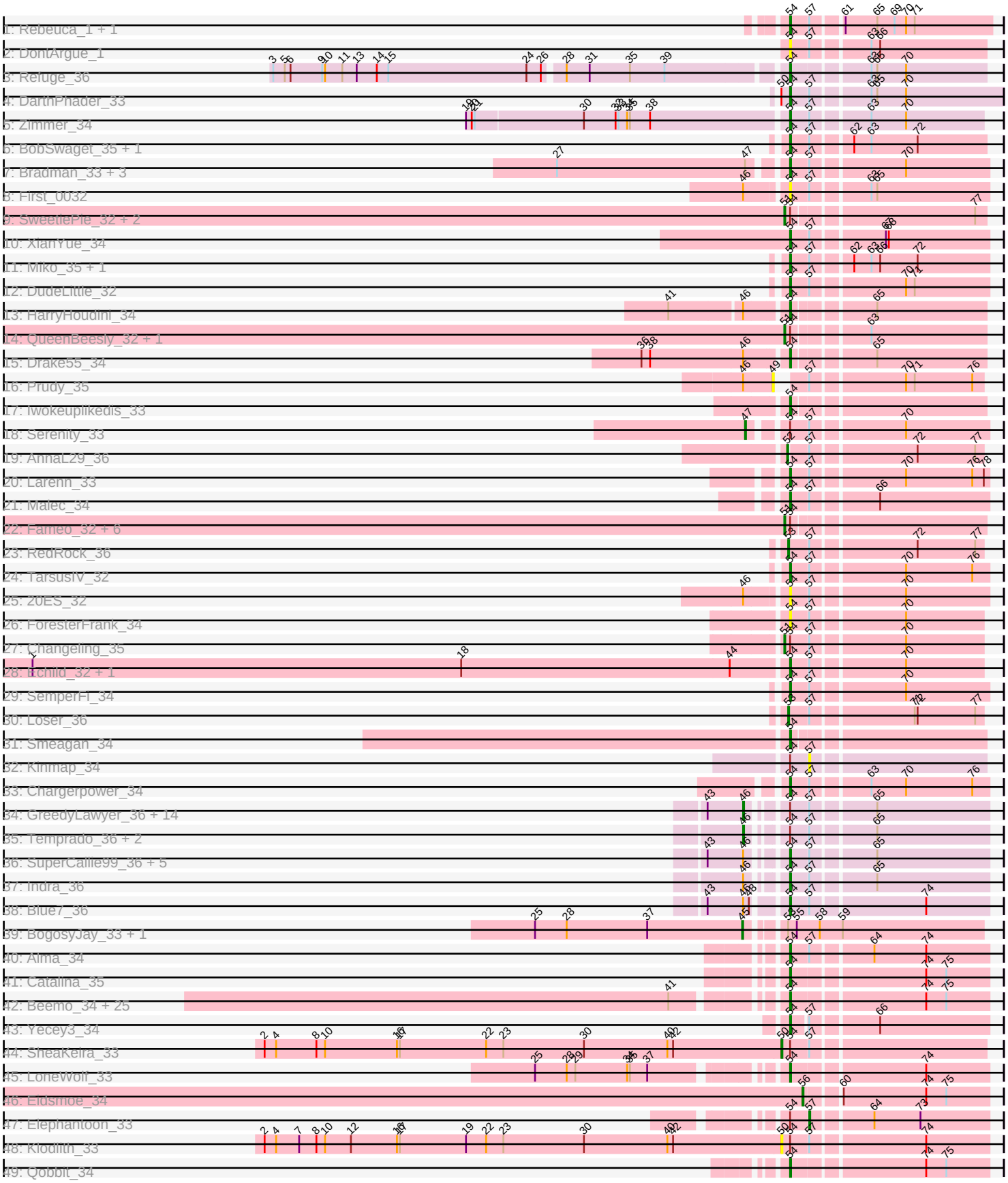
Pham 311398


1: Rebeuca_1 + 1
2: DontArgue_1
3: Refuge_36
4: DarthPhader_33
5: Zimmer_34
6: BobSwaget_35 + 1
7: Bradman_33 + 3
8: First_0032
9: SweetiePie_32 + 2
10: XianYue_34
11: Miko_35 + 1
12: DudeLittle_32
13: HarryHoudini_34
14: QueenBeesly_32 + 1
15: Drake55_34
16: Prudy_35
17: Iwokeuplikedis_33
18: Serenity_33
19: AnnaL29_36
20: Larenn_33
21: Malec_34
22: Fameo_32 + 6
23: RedRock_36
24: TarsusIV_32
25: 20ES_32
26: ForesterFrank_34
27: Changeling_35
28: Echild_32 + 1
29: SemperFi_34
30: Loser_36
31: Smeagan_34
32: Kinmap_34
33: Chargerpower_34
34: GreedyLawyer_36 + 14
35: Temprado_36 + 2
36: SuperCallie99_36 + 5
37: Indra_36
38: Blue7_36
39: BogosyJay_33 + 1
40: Alma_34
41: Catalina_35
42: Beemo_34 + 25
43: Yecey3_34
44: SheaKeira_33
45: LoneWolf_33
46: Eidsmoe_34
47: Elephantoon_33
48: Klodilth_33
49: Qobbit_34

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 311398 Report

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

Pham number 311398 has 112 members, 22 are drafts.

Phages represented in each track:
- Track 1 : Rebeuca_1, Kristoff_1
- Track 2 : DontArgue_1
- Track 3 : Refuge_36
- Track 4 : DarthPhader_33
- Track 5 : Zimmer_34
- Track 6 : BobSwaget_35, Lokk_35
- Track 7 : Bradman_33, Jsquared_33, MajorMajor_33, Quokka_32
- Track 8 : First_0032
- Track 9 : SweetiePie_32, Crucio_32, SnapTap_32
- Track 10 : XianYue_34
- Track 11 : Miko_35, Rachaly_35
- Track 12 : DudeLittle_32
- Track 13 : HarryHoudini_34
- Track 14 : QueenBeesly_32, FiringLine_32
- Track 15 : Drake55_34
- Track 16 : Prudy_35
- Track 17 : Iwokeuplikedis_33
- Track 18 : Serenity_33
- Track 19 : AnnaL29_36
- Track 20 : Larenn_33
- Track 21 : Malec_34
- Track 22 : Fameo_32, Retro23_32, Power_32, Anselm_32, Georgie2_33, QueenB2_32, Dalmatian_32
- Track 23 : RedRock_36
- Track 24 : TarsusIV_32
- Track 25 : 20ES_32
- Track 26 : ForesterFrank_34
- Track 27 : Changeling_35
- Track 28 : Echild_32, Benvolio_32
- Track 29 : SemperFi_34
- Track 30 : Loser_36
- Track 31 : Smeagan_34
- Track 32 : Kinmap_34
- Track 33 : Chargerpower_34
- Track 34 : GreedyLawyer_36, Priamo_36, EricB_36, DaVinci_36, Chartreuse_36, Pmask_36, Gladiator_36, Roksolana_36, DelvinSonDorr_35, Kazan_36, McFly_36, Candra_36, BennyP_36, SmellyB_36, VohminGhazi_36

• Track 35 : Temprado_36, Helmet_36, Garak_37
• Track 36 : SuperCallie99_36, BABullseye_36, Dorothea_36, Kipper29_36, Isiphiwo_36, Koko_36
• Track 37 : Indra_36
• Track 38 : Blue7_36
• Track 39 : BogosyJay_33, Maminiaina_33
• Track 40 : Alma_34
• Track 41 : Catalina_35
• Track 42 : Beemo_34, EdogawaKiddo_32, Hanray_33, Jiawan_33, PackMan_34, EmyBug_34, Aliter_34, Phaeder_34, Ugenie5_31, Lilleskat_32, RyeScarlet_35, Onglai_33, Fayely_34, Conquerage_34, Myxus_34, Phonnegut_34, Tubs_34, Holex_33, Pioneer_34, Spouty_34, Ayanochan_35, Sachima_32, Priya_34, HortumSL17_34, Scherzo_34, ExplosioNervosa_34
• Track 43 : Yecey3_34
• Track 44 : SheaKeira_33
• Track 45 : LoneWolf_33
• Track 46 : Eidsmoe_34
• Track 47 : Elephantoon_33
• Track 48 : Klodlith_33
• Track 49 : Qobbit_34

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

The start number called the most often in the published annotations is 54, it was called in 53 of the 90 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• 20ES_32, Aliter_34, Alma_34, Ayanochan_35, BABullseye_36, Beemo_34, Benvolio_32, Blue7_36, BobSwaget_35, Bradman_33, Catalina_35, Chargerpower_34, Conquerage_34, DarthPhader_33, DontArgue_1, Dorothea_36, Drake55_34, DudeLittle_32, Echild_32, EdogawaKiddo_32, EmyBug_34, ExplosioNervosa_34, Fayely_34, First_0032, ForesterFrank_34, Hanray_33, HarryHoudini_34, Holex_33, HortumSL17_34, Indra_36, Isiphiwo_36, Iwokeuplikedis_33, Jiawan_33, Jsquared_33, Kipper29_36, Koko_36, Kristoff_1, Larenn_33, Lilleskat_32, Lokk_35, LoneWolf_33, MajorMajor_33, Malec_34, Miko_35, Myxus_34, Onglai_33, PackMan_34, Phaeder_34, Phonnegut_34, Pioneer_34, Priya_34, Qobbit_34, Quokka_32, Rachaly_35, Rebeuca_1, Refuge_36, RyeScarlet_35, Sachima_32, Scherzo_34, SemperFi_34, Smeagan_34, Spouty_34, SuperCallie99_36, TarsusIV_32, Tubs_34, Ugenie5_31, XianYue_34, Yecey3_34, Zimmer_34,

Genes that have the "Most Annotated" start but do not call it:
• Anselm_32, BennyP_36, Candra_36, Changeling_35, Chartreuse_36, Crucio_32, DaVinci_36, Dalmatian_32, DelvinSonDorr_35, Elephantoon_33, EricB_36, Fameo_32, FiringLine_32, Garak_37, Georgie2_33, Gladiator_36, GreedyLawyer_36, Helmet_36, Kazan_36, Kinmap_34, Klodlith_33, McFly_36, Pmask_36, Power_32, Priamo_36, QueenB2_32, QueenBeesly_32, Retro23_32, Roksolana_36, Serenity_33, SheaKeira_33, SmellyB_36, SnapTap_32, SweetiePie_32, Temprado_36, VohminGhazi_36,

Genes that do not have the "Most Annotated" start:
• AnnaL29_36, BogosyJay_33, Eidsmoe_34, Loser_36, Maminiaina_33, Prudy_35, RedRock_36,

Summary by start number:

Start 45:
• Found in 2 of 112 (1.8%) of genes in pham
• Manual Annotations of this start: 2 of 90
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BogosyJay_33 (A9), Maminiaina_33 (A9),

Start 46:
• Found in 31 of 112 (27.7%) of genes in pham
• Manual Annotations of this start: 15 of 90
• Called 58.1% of time when present
• Phage (with cluster) where this start called: BennyP_36 (A6), Candra_36 (A6), Chartreuse_36 (A6), DaVinci_36 (A6), DelvinSonDorr_35 (A6), EricB_36 (A6), Garak_37 (A6), Gladiator_36 (A6), GreedyLawyer_36 (A6), Helmet_36 (A6), Kazan_36 (A6), McFly_36 (A6), Pmask_36 (A6), Priamo_36 (A6), Roksolana_36 (A6), SmellyB_36 (A6), Temprado_36 (A6), VohminGhazi_36 (A6),

Start 47:
• Found in 5 of 112 (4.5%) of genes in pham
• Manual Annotations of this start: 1 of 90
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Serenity_33 (A2),

Start 49:
• Found in 1 of 112 (0.9%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Prudy_35 (A2),

Start 50:
• Found in 3 of 112 (2.7%) of genes in pham
• Manual Annotations of this start: 1 of 90
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Klodlith_33 (A9), SheaKeira_33 (A9),

Start 51:
• Found in 13 of 112 (11.6%) of genes in pham
• Manual Annotations of this start: 13 of 90
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Anselm_32 (A2), Changeling_35 (A2), Crucio_32 (A2), Dalmatian_32 (A2), Fameo_32 (A2), FiringLine_32 (A2), Georgie2_33 (A2), Power_32 (A2), QueenB2_32 (A2), QueenBeesly_32 (A2), Retro23_32 (A2), SnapTap_32 (A2), SweetiePie_32 (A2),

Start 52:
• Found in 1 of 112 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 90

• Called 100.0% of time when present
• Phage (with cluster) where this start called: AnnaL29_36 (A2),

Start 53:
• Found in 4 of 112 (3.6%) of genes in pham
• Manual Annotations of this start: 2 of 90
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Loser_36 (A2), RedRock_36 (A2),

Start 54:
• Found in 105 of 112 (93.8%) of genes in pham
• Manual Annotations of this start: 53 of 90
• Called 65.7% of time when present
• Phage (with cluster) where this start called: 20ES_32 (A2), Aliter_34 (A9), Alma_34 (A9), Ayanochan_35 (A9), BABullseye_36 (A6), Beemo_34 (A9), Benvolio_32 (A2), Blue7_36 (A6), BobSwaget_35 (A2), Bradman_33 (A2), Catalina_35 (A9), Chargerpower_34 (A22), Conquerage_34 (A9), DarthPhader_33 (A12), DontArgue_1 (A10), Dorothea_36 (A6), Drake55_34 (A2), DudeLittle_32 (A2), Echild_32 (A2), EdogawaKiddo_32 (A9), EmyBug_34 (A9), ExplosioNervosa_34 (A9), Fayely_34 (A9), First_0032 (A2), ForesterFrank_34 (A2), Hanray_33 (A9), HarryHoudini_34 (A2), Holex_33 (A9), HortumSL17_34 (A9), Indra_36 (A6), Isiphiwo_36 (A6), Iwokeuplikedis_33 (A2), Jiawan_33 (A9), Jsquared_33 (A2), Kipper29_36 (A6), Koko_36 (A6), Kristoff_1 (A10), Larenn_33 (A2), Lilleskat_32 (A9), Lokk_35 (A2), LoneWolf_33 (A9), MajorMajor_33 (A2), Malec_34 (A2), Miko_35 (A2), Myxus_34 (A9), Onglai_33 (A9), PackMan_34 (A9), Phaeder_34 (A9), Phonnegut_34 (A9), Pioneer_34 (A9), Priya_34 (A9), Qobbit_34 (A9), Quokka_32 (A2), Rachaly_35 (A2), Rebeuca_1 (A10), Refuge_36 (A12), RyeScarlet_35 (A9), Sachima_32 (A9), Scherzo_34 (A9), SemperFi_34 (A2), Smeagan_34 (A2), Spouty_34 (A9), SuperCallie99_36 (A6), TarsusIV_32 (A2), Tubs_34 (A9), Ugenie5_31 (A9), XianYue_34 (A2), Yecey3_34 (A9), Zimmer_34 (A12),

Start 56:
• Found in 1 of 112 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 90
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Eidsmoe_34 (A9),

Start 57:
• Found in 63 of 112 (56.2%) of genes in pham
• Manual Annotations of this start: 1 of 90
• Called 3.2% of time when present
• Phage (with cluster) where this start called: Elephantoon_33 (A9), Kinmap_34 (A21),

Summary by clusters:

There are 7 clusters represented in this pham: A21, A22, A10, A12, A2, A6, A9,

Info for manual annotations of cluster A10:
•Start number 54 was manually annotated 2 times for cluster A10.

Info for manual annotations of cluster A12:
•Start number 54 was manually annotated 3 times for cluster A12.

Info for manual annotations of cluster A2:
•Start number 47 was manually annotated 1 time for cluster A2.
•Start number 51 was manually annotated 13 times for cluster A2.
•Start number 52 was manually annotated 1 time for cluster A2.
•Start number 53 was manually annotated 2 times for cluster A2.
•Start number 54 was manually annotated 17 times for cluster A2.

Info for manual annotations of cluster A22:
•Start number 54 was manually annotated 1 time for cluster A22.

Info for manual annotations of cluster A6:
•Start number 46 was manually annotated 15 times for cluster A6.
•Start number 54 was manually annotated 8 times for cluster A6.

Info for manual annotations of cluster A9:
•Start number 45 was manually annotated 2 times for cluster A9.
•Start number 50 was manually annotated 1 time for cluster A9.
•Start number 54 was manually annotated 22 times for cluster A9.
•Start number 56 was manually annotated 1 time for cluster A9.
•Start number 57 was manually annotated 1 time for cluster A9.

Gene Information:

Gene: 20ES_32 Start: 25276, Stop: 25470, Start Num: 54
Candidate Starts for 20ES_32:
(Start: 46 @25237 has 15 MA's), (Start: 54 @25276 has 53 MA's), (Start: 57 @25294 has 1 MA's), (70, 25384),

Gene: Aliter_34 Start: 26137, Stop: 26331, Start Num: 54
Candidate Starts for Aliter_34:
(41, 26044), (Start: 54 @26137 has 53 MA's), (74, 26266), (75, 26287),

Gene: Alma_34 Start: 26253, Stop: 26447, Start Num: 54
Candidate Starts for Alma_34:
(Start: 54 @26253 has 53 MA's), (Start: 57 @26271 has 1 MA's), (64, 26328), (74, 26382),

Gene: AnnaL29_36 Start: 26963, Stop: 27151, Start Num: 52
Candidate Starts for AnnaL29_36:
(Start: 52 @26963 has 1 MA's), (Start: 57 @26981 has 1 MA's), (72, 27083), (77, 27143),

Gene: Anselm_32 Start: 25137, Stop: 25331, Start Num: 51
Candidate Starts for Anselm_32:
(Start: 51 @25137 has 13 MA's), (Start: 54 @25143 has 53 MA's),

Gene: Ayanochan_35 Start: 26242, Stop: 26436, Start Num: 54
Candidate Starts for Ayanochan_35:
(41, 26149), (Start: 54 @26242 has 53 MA's), (74, 26371), (75, 26392),

Gene: BABullseye_36 Start: 24354, Stop: 24548, Start Num: 54
Candidate Starts for BABullseye_36:

(43, 24291), (Start: 46 @24327 has 15 MA's), (Start: 54 @24354 has 53 MA's), (Start: 57 @24372 has 1 MA's), (65, 24432),

Gene: Beemo_34 Start: 26243, Stop: 26437, Start Num: 54
Candidate Starts for Beemo_34:
(41, 26150), (Start: 54 @26243 has 53 MA's), (74, 26372), (75, 26393),

Gene: BennyP_36 Start: 24254, Stop: 24475, Start Num: 46
Candidate Starts for BennyP_36:
(43, 24218), (Start: 46 @24254 has 15 MA's), (Start: 54 @24281 has 53 MA's), (Start: 57 @24299 has 1 MA's), (65, 24359),

Gene: Benvolio_32 Start: 25256, Stop: 25444, Start Num: 54
Candidate Starts for Benvolio_32:
(1, 24476), (18, 24923), (44, 25202), (Start: 54 @25256 has 53 MA's), (Start: 57 @25274 has 1 MA's), (70, 25364),

Gene: Blue7_36 Start: 24271, Stop: 24465, Start Num: 54
Candidate Starts for Blue7_36:
(43, 24202), (Start: 46 @24238 has 15 MA's), (48, 24244), (Start: 54 @24271 has 53 MA's), (Start: 57 @24289 has 1 MA's), (74, 24400),

Gene: BobSwaget_35 Start: 26212, Stop: 26403, Start Num: 54
Candidate Starts for BobSwaget_35:
(Start: 54 @26212 has 53 MA's), (Start: 57 @26230 has 1 MA's), (62, 26266), (63, 26284), (72, 26332),

Gene: BogosyJay_33 Start: 25749, Stop: 25982, Start Num: 45
Candidate Starts for BogosyJay_33:
(25, 25533), (28, 25566), (37, 25650), (Start: 45 @25749 has 2 MA's), (Start: 53 @25779 has 2 MA's), (55, 25788), (58, 25812), (59, 25836),

Gene: Bradman_33 Start: 24295, Stop: 24489, Start Num: 54
Candidate Starts for Bradman_33:
(27, 24073), (Start: 47 @24268 has 1 MA's), (Start: 54 @24295 has 53 MA's), (Start: 57 @24313 has 1 MA's), (70, 24403),

Gene: Candra_36 Start: 24290, Stop: 24511, Start Num: 46
Candidate Starts for Candra_36:
(43, 24254), (Start: 46 @24290 has 15 MA's), (Start: 54 @24317 has 53 MA's), (Start: 57 @24335 has 1 MA's), (65, 24395),

Gene: Catalina_35 Start: 26210, Stop: 26404, Start Num: 54
Candidate Starts for Catalina_35:
(Start: 54 @26210 has 53 MA's), (74, 26339), (75, 26360),

Gene: Changeling_35 Start: 26957, Stop: 27151, Start Num: 51
Candidate Starts for Changeling_35:
(Start: 51 @26957 has 13 MA's), (Start: 54 @26963 has 53 MA's), (Start: 57 @26981 has 1 MA's), (70, 27071),

Gene: Chargerpower_34 Start: 24510, Stop: 24704, Start Num: 54
Candidate Starts for Chargerpower_34:
(Start: 54 @24510 has 53 MA's), (Start: 57 @24528 has 1 MA's), (63, 24582), (70, 24618), (76, 24687),

Gene: Chartreuse_36 Start: 24201, Stop: 24422, Start Num: 46
Candidate Starts for Chartreuse_36:
(43, 24165), (Start: 46 @24201 has 15 MA's), (Start: 54 @24228 has 53 MA's), (Start: 57 @24246 has 1 MA's), (65, 24306),

Gene: Conquerage_34 Start: 26239, Stop: 26433, Start Num: 54
Candidate Starts for Conquerage_34:
(41, 26146), (Start: 54 @26239 has 53 MA's), (74, 26368), (75, 26389),

Gene: Crucio_32 Start: 24906, Stop: 25100, Start Num: 51
Candidate Starts for Crucio_32:
(Start: 51 @24906 has 13 MA's), (Start: 54 @24912 has 53 MA's), (77, 25089),

Gene: DaVinci_36 Start: 24255, Stop: 24476, Start Num: 46
Candidate Starts for DaVinci_36:
(43, 24219), (Start: 46 @24255 has 15 MA's), (Start: 54 @24282 has 53 MA's), (Start: 57 @24300 has 1 MA's), (65, 24360),

Gene: Dalmatian_32 Start: 25113, Stop: 25307, Start Num: 51
Candidate Starts for Dalmatian_32:
(Start: 51 @25113 has 13 MA's), (Start: 54 @25119 has 53 MA's),

Gene: DarthPhader_33 Start: 26222, Stop: 26431, Start Num: 54
Candidate Starts for DarthPhader_33:
(Start: 50 @26216 has 1 MA's), (Start: 54 @26222 has 53 MA's), (Start: 57 @26240 has 1 MA's), (63, 26294), (65, 26300), (70, 26330),

Gene: DelvinSonDorr_35 Start: 24247, Stop: 24468, Start Num: 46
Candidate Starts for DelvinSonDorr_35:
(43, 24211), (Start: 46 @24247 has 15 MA's), (Start: 54 @24274 has 53 MA's), (Start: 57 @24292 has 1 MA's), (65, 24352),

Gene: DontArgue_1 Start: 129, Stop: 320, Start Num: 54
Candidate Starts for DontArgue_1:
(Start: 54 @129 has 53 MA's), (Start: 57 @147 has 1 MA's), (63, 201), (66, 210),

Gene: Dorothea_36 Start: 24282, Stop: 24476, Start Num: 54
Candidate Starts for Dorothea_36:
(43, 24219), (Start: 46 @24255 has 15 MA's), (Start: 54 @24282 has 53 MA's), (Start: 57 @24300 has 1 MA's), (65, 24360),

Gene: Drake55_34 Start: 25399, Stop: 25587, Start Num: 54
Candidate Starts for Drake55_34:
(36, 25255), (38, 25264), (Start: 46 @25360 has 15 MA's), (Start: 54 @25399 has 53 MA's), (65, 25474),

Gene: DudeLittle_32 Start: 25122, Stop: 25316, Start Num: 54
Candidate Starts for DudeLittle_32:
(Start: 54 @25122 has 53 MA's), (Start: 57 @25140 has 1 MA's), (70, 25230), (71, 25239),

Gene: Echild_32 Start: 25256, Stop: 25444, Start Num: 54
Candidate Starts for Echild_32:

(1, 24476), (18, 24923), (44, 25202), (Start: 54 @25256 has 53 MA's), (Start: 57 @25274 has 1 MA's), (70, 25364),

Gene: EdogawaKiddo_32 Start: 26209, Stop: 26403, Start Num: 54
Candidate Starts for EdogawaKiddo_32:
(41, 26116), (Start: 54 @26209 has 53 MA's), (74, 26338), (75, 26359),

Gene: Eidsmoe_34 Start: 26288, Stop: 26467, Start Num: 56
Candidate Starts for Eidsmoe_34:
(Start: 56 @26288 has 1 MA's), (60, 26318), (74, 26402), (75, 26423),

Gene: Elephantoon_33 Start: 25663, Stop: 25839, Start Num: 57
Candidate Starts for Elephantoon_33:
(Start: 54 @25645 has 53 MA's), (Start: 57 @25663 has 1 MA's), (64, 25720), (73, 25768),

Gene: EmyBug_34 Start: 26275, Stop: 26469, Start Num: 54
Candidate Starts for EmyBug_34:
(41, 26182), (Start: 54 @26275 has 53 MA's), (74, 26404), (75, 26425),

Gene: EricB_36 Start: 24247, Stop: 24468, Start Num: 46
Candidate Starts for EricB_36:
(43, 24211), (Start: 46 @24247 has 15 MA's), (Start: 54 @24274 has 53 MA's), (Start: 57 @24292 has 1 MA's), (65, 24352),

Gene: ExplosioNervosa_34 Start: 26278, Stop: 26472, Start Num: 54
Candidate Starts for ExplosioNervosa_34:
(41, 26185), (Start: 54 @26278 has 53 MA's), (74, 26407), (75, 26428),

Gene: Fameo_32 Start: 25078, Stop: 25272, Start Num: 51
Candidate Starts for Fameo_32:
(Start: 51 @25078 has 13 MA's), (Start: 54 @25084 has 53 MA's),

Gene: Fayely_34 Start: 26242, Stop: 26436, Start Num: 54
Candidate Starts for Fayely_34:
(41, 26149), (Start: 54 @26242 has 53 MA's), (74, 26371), (75, 26392),

Gene: FiringLine_32 Start: 24903, Stop: 25097, Start Num: 51
Candidate Starts for FiringLine_32:
(Start: 51 @24903 has 13 MA's), (Start: 54 @24909 has 53 MA's), (63, 24978),

Gene: First_0032 Start: 25337, Stop: 25531, Start Num: 54
Candidate Starts for First_0032:
(Start: 46 @25298 has 15 MA's), (Start: 54 @25337 has 53 MA's), (Start: 57 @25355 has 1 MA's), (63, 25409), (65, 25415),

Gene: ForesterFrank_34 Start: 26630, Stop: 26818, Start Num: 54
Candidate Starts for ForesterFrank_34:
(Start: 54 @26630 has 53 MA's), (Start: 57 @26648 has 1 MA's), (70, 26738),

Gene: Garak_37 Start: 24255, Stop: 24476, Start Num: 46
Candidate Starts for Garak_37:
(Start: 46 @24255 has 15 MA's), (Start: 54 @24282 has 53 MA's), (Start: 57 @24300 has 1 MA's), (65, 24360),

Gene: Georgie2_33 Start: 24948, Stop: 25142, Start Num: 51
Candidate Starts for Georgie2_33:
(Start: 51 @24948 has 13 MA's), (Start: 54 @24954 has 53 MA's),

Gene: Gladiator_36 Start: 24242, Stop: 24463, Start Num: 46
Candidate Starts for Gladiator_36:
(43, 24206), (Start: 46 @24242 has 15 MA's), (Start: 54 @24269 has 53 MA's), (Start: 57 @24287 has 1 MA's), (65, 24347),

Gene: GreedyLawyer_36 Start: 24254, Stop: 24475, Start Num: 46
Candidate Starts for GreedyLawyer_36:
(43, 24218), (Start: 46 @24254 has 15 MA's), (Start: 54 @24281 has 53 MA's), (Start: 57 @24299 has 1 MA's), (65, 24359),

Gene: Hanray_33 Start: 26213, Stop: 26407, Start Num: 54
Candidate Starts for Hanray_33:
(41, 26120), (Start: 54 @26213 has 53 MA's), (74, 26342), (75, 26363),

Gene: HarryHoudini_34 Start: 25397, Stop: 25585, Start Num: 54
Candidate Starts for HarryHoudini_34:
(41, 25286), (Start: 46 @25358 has 15 MA's), (Start: 54 @25397 has 53 MA's), (65, 25472),

Gene: Helmet_36 Start: 24255, Stop: 24476, Start Num: 46
Candidate Starts for Helmet_36:
(Start: 46 @24255 has 15 MA's), (Start: 54 @24282 has 53 MA's), (Start: 57 @24300 has 1 MA's), (65, 24360),

Gene: Holex_33 Start: 26213, Stop: 26407, Start Num: 54
Candidate Starts for Holex_33:
(41, 26120), (Start: 54 @26213 has 53 MA's), (74, 26342), (75, 26363),

Gene: HortumSL17_34 Start: 26209, Stop: 26403, Start Num: 54
Candidate Starts for HortumSL17_34:
(41, 26116), (Start: 54 @26209 has 53 MA's), (74, 26338), (75, 26359),

Gene: Indra_36 Start: 24283, Stop: 24477, Start Num: 54
Candidate Starts for Indra_36:
(Start: 46 @24256 has 15 MA's), (Start: 54 @24283 has 53 MA's), (Start: 57 @24301 has 1 MA's), (65, 24361),

Gene: Isiphiwo_36 Start: 24352, Stop: 24546, Start Num: 54
Candidate Starts for Isiphiwo_36:
(43, 24289), (Start: 46 @24325 has 15 MA's), (Start: 54 @24352 has 53 MA's), (Start: 57 @24370 has 1 MA's), (65, 24430),

Gene: Iwokeuplikedis_33 Start: 24875, Stop: 25063, Start Num: 54
Candidate Starts for Iwokeuplikedis_33:
(Start: 54 @24875 has 53 MA's),

Gene: Jiawan_33 Start: 26245, Stop: 26439, Start Num: 54
Candidate Starts for Jiawan_33:
(41, 26152), (Start: 54 @26245 has 53 MA's), (74, 26374), (75, 26395),

Gene: Jsquared_33 Start: 24368, Stop: 24562, Start Num: 54
Candidate Starts for Jsquared_33:
(27, 24146), (Start: 47 @24341 has 1 MA's), (Start: 54 @24368 has 53 MA's), (Start: 57 @24386 has 1 MA's), (70, 24476),

Gene: Kazan_36 Start: 24260, Stop: 24481, Start Num: 46
Candidate Starts for Kazan_36:
(43, 24224), (Start: 46 @24260 has 15 MA's), (Start: 54 @24287 has 53 MA's), (Start: 57 @24305 has 1 MA's), (65, 24365),

Gene: Kinmap_34 Start: 24981, Stop: 25154, Start Num: 57
Candidate Starts for Kinmap_34:
(Start: 54 @24963 has 53 MA's), (Start: 57 @24981 has 1 MA's),

Gene: Kipper29_36 Start: 24281, Stop: 24475, Start Num: 54
Candidate Starts for Kipper29_36:
(43, 24218), (Start: 46 @24254 has 15 MA's), (Start: 54 @24281 has 53 MA's), (Start: 57 @24299 has 1 MA's), (65, 24359),

Gene: Klodlith_33 Start: 24710, Stop: 24910, Start Num: 50
Candidate Starts for Klodlith_33:
(2, 24179), (4, 24191), (7, 24215), (8, 24233), (10, 24242), (12, 24269), (16, 24317), (17, 24320), (19, 24389), (22, 24410), (23, 24428), (30, 24512), (40, 24599), (42, 24605), (Start: 50 @24710 has 1 MA's), (Start: 54 @24716 has 53 MA's), (Start: 57 @24734 has 1 MA's), (74, 24845),

Gene: Koko_36 Start: 24619, Stop: 24813, Start Num: 54
Candidate Starts for Koko_36:
(43, 24556), (Start: 46 @24592 has 15 MA's), (Start: 54 @24619 has 53 MA's), (Start: 57 @24637 has 1 MA's), (65, 24697),

Gene: Kristoff_1 Start: 130, Stop: 327, Start Num: 54
Candidate Starts for Kristoff_1:
(Start: 54 @130 has 53 MA's), (Start: 57 @148 has 1 MA's), (61, 175), (65, 208), (69, 226), (70, 238), (71, 247),

Gene: Larenn_33 Start: 25342, Stop: 25536, Start Num: 54
Candidate Starts for Larenn_33:
(Start: 54 @25342 has 53 MA's), (Start: 57 @25360 has 1 MA's), (70, 25450), (76, 25519), (78, 25531),

Gene: Lilleskat_32 Start: 26209, Stop: 26403, Start Num: 54
Candidate Starts for Lilleskat_32:
(41, 26116), (Start: 54 @26209 has 53 MA's), (74, 26338), (75, 26359),

Gene: Lokk_35 Start: 26231, Stop: 26431, Start Num: 54
Candidate Starts for Lokk_35:
(Start: 54 @26231 has 53 MA's), (Start: 57 @26249 has 1 MA's), (62, 26285), (63, 26303), (72, 26351),

Gene: LoneWolf_33 Start: 25798, Stop: 25992, Start Num: 54
Candidate Starts for LoneWolf_33:
(25, 25570), (28, 25603), (29, 25612), (34, 25666), (35, 25669), (37, 25687), (Start: 54 @25798 has 53 MA's), (74, 25927),

Gene: Loser_36 Start: 26885, Stop: 27073, Start Num: 53
Candidate Starts for Loser_36:
(Start: 53 @26885 has 2 MA's), (Start: 57 @26903 has 1 MA's), (71, 27002), (72, 27005), (77, 27065),

Gene: MajorMajor_33 Start: 24295, Stop: 24489, Start Num: 54
Candidate Starts for MajorMajor_33:
(27, 24073), (Start: 47 @24268 has 1 MA's), (Start: 54 @24295 has 53 MA's), (Start: 57 @24313 has 1 MA's), (70, 24403),

Gene: Malec_34 Start: 25875, Stop: 26069, Start Num: 54
Candidate Starts for Malec_34:
(Start: 54 @25875 has 53 MA's), (Start: 57 @25893 has 1 MA's), (66, 25956),

Gene: Maminiaina_33 Start: 25731, Stop: 25964, Start Num: 45
Candidate Starts for Maminiaina_33:
(25, 25515), (28, 25548), (37, 25632), (Start: 45 @25731 has 2 MA's), (Start: 53 @25761 has 2 MA's), (55, 25770), (58, 25794), (59, 25818),

Gene: McFly_36 Start: 24254, Stop: 24475, Start Num: 46
Candidate Starts for McFly_36:
(43, 24218), (Start: 46 @24254 has 15 MA's), (Start: 54 @24281 has 53 MA's), (Start: 57 @24299 has 1 MA's), (65, 24359),

Gene: Miko_35 Start: 26351, Stop: 26545, Start Num: 54
Candidate Starts for Miko_35:
(Start: 54 @26351 has 53 MA's), (Start: 57 @26369 has 1 MA's), (62, 26405), (63, 26423), (66, 26432), (72, 26471),

Gene: Myxus_34 Start: 26209, Stop: 26403, Start Num: 54
Candidate Starts for Myxus_34:
(41, 26116), (Start: 54 @26209 has 53 MA's), (74, 26338), (75, 26359),

Gene: Onglai_33 Start: 24543, Stop: 24737, Start Num: 54
Candidate Starts for Onglai_33:
(41, 24450), (Start: 54 @24543 has 53 MA's), (74, 24672), (75, 24693),

Gene: PackMan_34 Start: 26209, Stop: 26403, Start Num: 54
Candidate Starts for PackMan_34:
(41, 26116), (Start: 54 @26209 has 53 MA's), (74, 26338), (75, 26359),

Gene: Phaeder_34 Start: 26209, Stop: 26403, Start Num: 54
Candidate Starts for Phaeder_34:
(41, 26116), (Start: 54 @26209 has 53 MA's), (74, 26338), (75, 26359),

Gene: Phonnegut_34 Start: 26242, Stop: 26436, Start Num: 54
Candidate Starts for Phonnegut_34:
(41, 26149), (Start: 54 @26242 has 53 MA's), (74, 26371), (75, 26392),

Gene: Pioneer_34 Start: 26242, Stop: 26436, Start Num: 54
Candidate Starts for Pioneer_34:
(41, 26149), (Start: 54 @26242 has 53 MA's), (74, 26371), (75, 26392),

Gene: Pmask_36 Start: 24248, Stop: 24469, Start Num: 46

Candidate Starts for Pmask_36:
(43, 24212), (Start: 46 @24248 has 15 MA's), (Start: 54 @24275 has 53 MA's), (Start: 57 @24293 has 1 MA's), (65, 24353),

Gene: Power_32 Start: 24957, Stop: 25151, Start Num: 51
Candidate Starts for Power_32:
(Start: 51 @24957 has 13 MA's), (Start: 54 @24963 has 53 MA's),

Gene: Priamo_36 Start: 24297, Stop: 24518, Start Num: 46
Candidate Starts for Priamo_36:
(43, 24261), (Start: 46 @24297 has 15 MA's), (Start: 54 @24324 has 53 MA's), (Start: 57 @24342 has 1 MA's), (65, 24402),

Gene: Priya_34 Start: 26276, Stop: 26470, Start Num: 54
Candidate Starts for Priya_34:
(41, 26183), (Start: 54 @26276 has 53 MA's), (74, 26405), (75, 26426),

Gene: Prudy_35 Start: 26967, Stop: 27155, Start Num: 49
Candidate Starts for Prudy_35:
(Start: 46 @26937 has 15 MA's), (49, 26967), (Start: 57 @26985 has 1 MA's), (70, 27075), (71, 27084), (76, 27144),

Gene: Qobbit_34 Start: 26238, Stop: 26432, Start Num: 54
Candidate Starts for Qobbit_34:
(Start: 54 @26238 has 53 MA's), (74, 26367), (75, 26388),

Gene: QueenB2_32 Start: 25018, Stop: 25212, Start Num: 51
Candidate Starts for QueenB2_32:
(Start: 51 @25018 has 13 MA's), (Start: 54 @25024 has 53 MA's),

Gene: QueenBeesly_32 Start: 24903, Stop: 25097, Start Num: 51
Candidate Starts for QueenBeesly_32:
(Start: 51 @24903 has 13 MA's), (Start: 54 @24909 has 53 MA's), (63, 24978),

Gene: Quokka_32 Start: 24295, Stop: 24489, Start Num: 54
Candidate Starts for Quokka_32:
(27, 24073), (Start: 47 @24268 has 1 MA's), (Start: 54 @24295 has 53 MA's), (Start: 57 @24313 has 1 MA's), (70, 24403),

Gene: Rachaly_35 Start: 26226, Stop: 26420, Start Num: 54
Candidate Starts for Rachaly_35:
(Start: 54 @26226 has 53 MA's), (Start: 57 @26244 has 1 MA's), (62, 26280), (63, 26298), (66, 26307), (72, 26346),

Gene: Rebeuca_1 Start: 130, Stop: 327, Start Num: 54
Candidate Starts for Rebeuca_1:
(Start: 54 @130 has 53 MA's), (Start: 57 @148 has 1 MA's), (61, 175), (65, 208), (69, 226), (70, 238), (71, 247),

Gene: RedRock_36 Start: 27043, Stop: 27231, Start Num: 53
Candidate Starts for RedRock_36:
(Start: 53 @27043 has 2 MA's), (Start: 57 @27061 has 1 MA's), (72, 27163), (77, 27223),

Gene: Refuge_36 Start: 28084, Stop: 28275, Start Num: 54
Candidate Starts for Refuge_36:
(3, 27574), (5, 27586), (6, 27592), (9, 27625), (10, 27628), (11, 27646), (13, 27661), (14, 27682), (15, 27694), (24, 27838), (26, 27853), (28, 27871), (31, 27895), (35, 27937), (39, 27973), (Start: 54 @28084 has 53 MA's), (63, 28156), (65, 28162), (70, 28192),

Gene: Retro23_32 Start: 25108, Stop: 25302, Start Num: 51
Candidate Starts for Retro23_32:
(Start: 51 @25108 has 13 MA's), (Start: 54 @25114 has 53 MA's),

Gene: Roksolana_36 Start: 24268, Stop: 24489, Start Num: 46
Candidate Starts for Roksolana_36:
(43, 24232), (Start: 46 @24268 has 15 MA's), (Start: 54 @24295 has 53 MA's), (Start: 57 @24313 has 1 MA's), (65, 24373),

Gene: RyeScarlet_35 Start: 26213, Stop: 26407, Start Num: 54
Candidate Starts for RyeScarlet_35:
(41, 26120), (Start: 54 @26213 has 53 MA's), (74, 26342), (75, 26363),

Gene: Sachima_32 Start: 26209, Stop: 26403, Start Num: 54
Candidate Starts for Sachima_32:
(41, 26116), (Start: 54 @26209 has 53 MA's), (74, 26338), (75, 26359),

Gene: Scherzo_34 Start: 26242, Stop: 26436, Start Num: 54
Candidate Starts for Scherzo_34:
(41, 26149), (Start: 54 @26242 has 53 MA's), (74, 26371), (75, 26392),

Gene: SemperFi_34 Start: 25337, Stop: 25531, Start Num: 54
Candidate Starts for SemperFi_34:
(Start: 54 @25337 has 53 MA's), (Start: 57 @25355 has 1 MA's), (70, 25445),

Gene: Serenity_33 Start: 24393, Stop: 24614, Start Num: 47
Candidate Starts for Serenity_33:
(Start: 47 @24393 has 1 MA's), (Start: 54 @24420 has 53 MA's), (Start: 57 @24438 has 1 MA's), (70, 24528),

Gene: SheaKeira_33 Start: 24739, Stop: 24936, Start Num: 50
Candidate Starts for SheaKeira_33:
(2, 24208), (4, 24220), (8, 24262), (10, 24271), (16, 24346), (17, 24349), (22, 24439), (23, 24457), (30, 24541), (40, 24628), (42, 24634), (Start: 50 @24739 has 1 MA's), (Start: 54 @24745 has 53 MA's), (Start: 57 @24763 has 1 MA's),

Gene: Smeagan_34 Start: 25425, Stop: 25613, Start Num: 54
Candidate Starts for Smeagan_34:
(Start: 54 @25425 has 53 MA's),

Gene: SmellyB_36 Start: 24254, Stop: 24475, Start Num: 46
Candidate Starts for SmellyB_36:
(43, 24218), (Start: 46 @24254 has 15 MA's), (Start: 54 @24281 has 53 MA's), (Start: 57 @24299 has 1 MA's), (65, 24359),

Gene: SnapTap_32 Start: 24966, Stop: 25160, Start Num: 51
Candidate Starts for SnapTap_32:

(Start: 51 @24966 has 13 MA's), (Start: 54 @24972 has 53 MA's), (77, 25149),

Gene: Spouty_34 Start: 26275, Stop: 26469, Start Num: 54
Candidate Starts for Spouty_34:
(41, 26182), (Start: 54 @26275 has 53 MA's), (74, 26404), (75, 26425),

Gene: SuperCallie99_36 Start: 24273, Stop: 24467, Start Num: 54
Candidate Starts for SuperCallie99_36:
(43, 24210), (Start: 46 @24246 has 15 MA's), (Start: 54 @24273 has 53 MA's), (Start: 57 @24291 has 1 MA's), (65, 24351),

Gene: SweetiePie_32 Start: 24966, Stop: 25160, Start Num: 51
Candidate Starts for SweetiePie_32:
(Start: 51 @24966 has 13 MA's), (Start: 54 @24972 has 53 MA's), (77, 25149),

Gene: TarsusIV_32 Start: 25105, Stop: 25299, Start Num: 54
Candidate Starts for TarsusIV_32:
(Start: 54 @25105 has 53 MA's), (Start: 57 @25123 has 1 MA's), (70, 25213), (76, 25282),

Gene: Temprado_36 Start: 24255, Stop: 24476, Start Num: 46
Candidate Starts for Temprado_36:
(Start: 46 @24255 has 15 MA's), (Start: 54 @24282 has 53 MA's), (Start: 57 @24300 has 1 MA's), (65, 24360),

Gene: Tubs_34 Start: 26209, Stop: 26403, Start Num: 54
Candidate Starts for Tubs_34:
(41, 26116), (Start: 54 @26209 has 53 MA's), (74, 26338), (75, 26359),

Gene: Ugenie5_31 Start: 26242, Stop: 26436, Start Num: 54
Candidate Starts for Ugenie5_31:
(41, 26149), (Start: 54 @26242 has 53 MA's), (74, 26371), (75, 26392),

Gene: VohminGhazi_36 Start: 24254, Stop: 24475, Start Num: 46
Candidate Starts for VohminGhazi_36:
(43, 24218), (Start: 46 @24254 has 15 MA's), (Start: 54 @24281 has 53 MA's), (Start: 57 @24299 has 1 MA's), (65, 24359),

Gene: XianYue_34 Start: 25327, Stop: 25521, Start Num: 54
Candidate Starts for XianYue_34:
(Start: 54 @25327 has 53 MA's), (Start: 57 @25345 has 1 MA's), (67, 25414), (68, 25417),

Gene: Yecey3_34 Start: 25012, Stop: 25203, Start Num: 54
Candidate Starts for Yecey3_34:
(Start: 54 @25012 has 53 MA's), (Start: 57 @25027 has 1 MA's), (66, 25090),

Gene: Zimmer_34 Start: 26872, Stop: 27060, Start Num: 54
Candidate Starts for Zimmer_34:
(19, 26548), (20, 26554), (21, 26557), (30, 26668), (32, 26701), (33, 26704), (34, 26713), (35, 26716), (38, 26737), (Start: 54 @26872 has 53 MA's), (Start: 57 @26890 has 1 MA's), (63, 26944), (70, 26980),