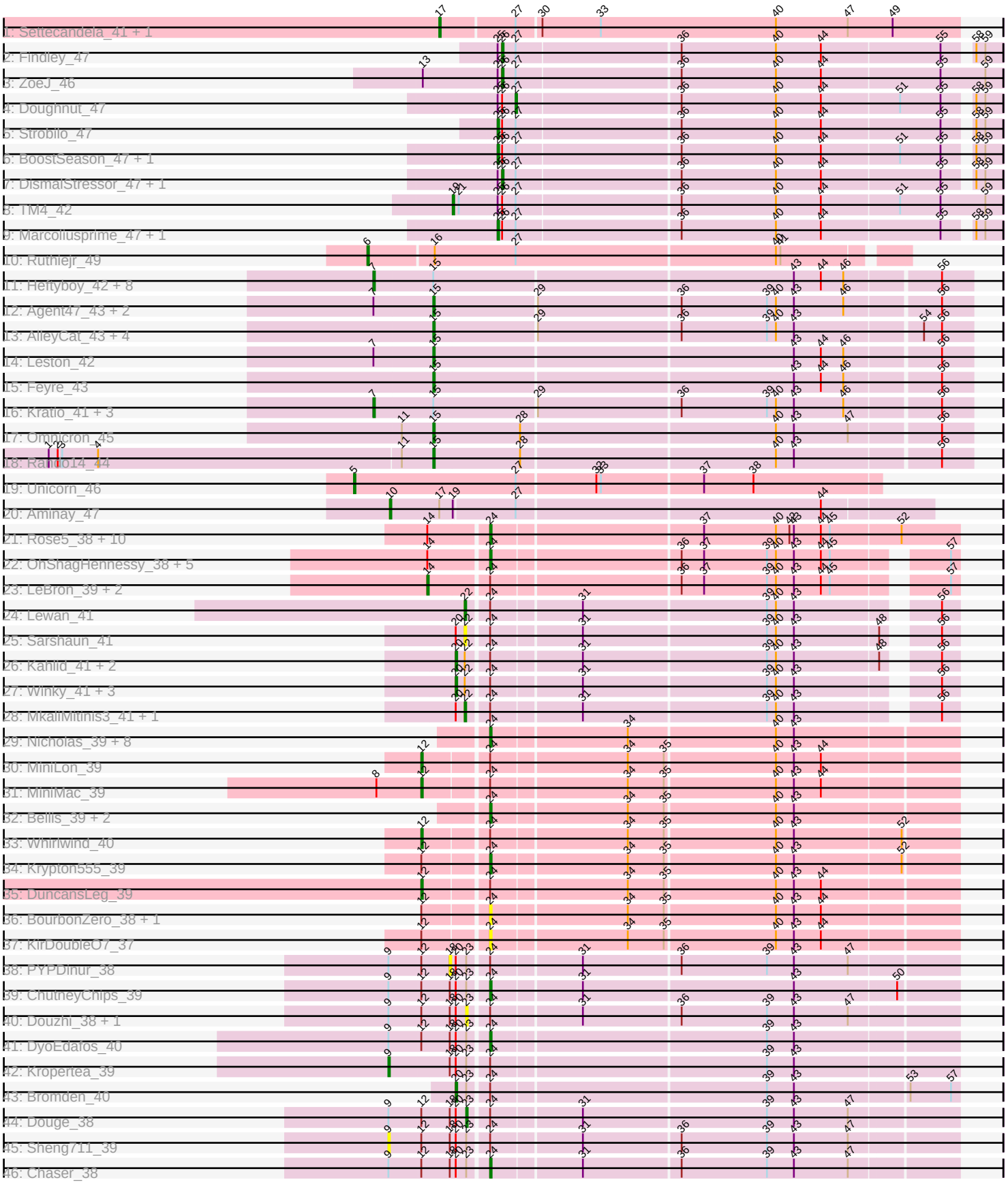
Pham 347452


1: Settecandela_41 + 1
2: Findley_47
3: ZoeJ_46
4: Doughnut_47
5: Strobilo_47
6: BoostSeason_47 + 1
7: DismalStressor_47 + 1
8: TM4_42
9: Marcoliusprime_47 + 1
10: Ruthiejr_49
11: Heftyboy_42 + 8
12: Agent47_43 + 2
13: AlleyCat_43 + 4
14: Leston_42
15: Feyre_43
16: Kratio_41 + 3
17: Omnicron_45
18: Ramio14_44
19: Unicorn_46
20: Aminay_47
21: Rose5_38 + 10
22: OhShagHennessy_38 + 5
23: LeBron_39 + 2
24: Lewan_41
25: Sarshaun_41
26: Kahlid_41 + 2
27: Winky_41 + 3
28: MkaiMitinis3_41 + 1
29: Nicholas_39 + 8
30: MiniLon_39
31: MiniMac_39
32: Bellis_39 + 2
33: Whirlwind_40
34: Krypton555_39
35: DuncansLeg_39
36: BourbonZero_38 + 1
37: KirDoubleO7_37
38: PYPDinur_38
39: ChutneyChips_39
40: Douzhi_38 + 1
41: DyoEdafos_40
42: Kropertea_39
43: Bromden_40
44: Douge_38
45: Sheng711_39
46: Chaser_38

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 347452 Report

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

Pham number 347452 has 102 members, 10 are drafts.

Phages represented in each track:
- Track 1 : Settecandela_41, Phrappuccino_41
- Track 2 : Findley_47
- Track 3 : ZoeJ_46
- Track 4 : Doughnut_47
- Track 5 : Strobilo_47
- Track 6 : BoostSeason_47, Mufasa_47
- Track 7 : DismalStressor_47, Milly_47
- Track 8 : TM4_42
- Track 9 : Marcoliusprime_47, DismalFunk_47
- Track 10 : Ruthiejr_49
- Track 11 : Heftyboy_42, Guillsminger_43, Gengar_42, OkiRoe_42, Waterfoul_43, Paola_42, Thyatira_44, Miryou_44, SoSeph_42
- Track 12 : Agent47_43, BananenDer11_43, LilDirt_42
- Track 13 : AlleyCat_43, Edugator_42, Psycho_43, Larva_43, Dadosky_43
- Track 14 : Leston_42
- Track 15 : Feyre_43
- Track 16 : Kratio_41, InvictusManeo_42, ViviJ_42, Collard_42
- Track 17 : Omnicron_45
- Track 18 : Rando14_44
- Track 19 : Unicorn_46
- Track 20 : Aminay_47
- Track 21 : Rose5_38, Calm_39, Tyson_38, CicholasNage_39, Wyatt2_39, MAckerman_39, Acquire49_39, Zaria_39, Silverleaf_38, AvadaKedavra_39, Halena_38
- Track 22 : OhShagHennessy_38, Poochiewood_38, Wamburgrxpress_39, Enceladus_38, Appletree2_38, DirkDirk_38
- Track 23 : LeBron_39, UPIE_39, JoeDirt_38
- Track 24 : Lewan_41
- Track 25 : Sarshaun_41
- Track 26 : Kahlid_41, Loadrie_41, Wigglewiggle_41
- Track 27 : Winky_41, Breezona_41, Rumpelstiltskin_41, Faith1_41
- Track 28 : MkaliMitinis3_41, LilDestine_41
- Track 29 : Nicholas_39, Red305_39, Lumos_39, Snenia_39, Jubie_39, Clautastrophe_39, MsGreen_39, Kingsolomon_39, TriFive_39
- Track 30 : MiniLon_39
- Track 31 : MiniMac_39
- Track 32 : Bellis_39, Moostard_39, Finnry_39

• Track 33 : Whirlwind_40
• Track 34 : Krypton555_39
• Track 35 : DuncansLeg_39
• Track 36 : BourbonZero_38, Ellson_39
• Track 37 : KirDoubleO7_37
• Track 38 : PYPDinur_38
• Track 39 : ChutneyChips_39
• Track 40 : Douzhi_38, BrainDrainer_39
• Track 41 : DyoEdafos_40
• Track 42 : Kropertea_39
• Track 43 : Bromden_40
• Track 44 : Douge_38
• Track 45 : Sheng711_39
• Track 46 : Chaser_38

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

The start number called the most often in the published annotations is 24, it was called in 31 of the 92 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Acquire49_39, Appletree2_38, AvadaKedavra_39, Bellis_39, BourbonZero_38, Calm_39, Chaser_38, ChutneyChips_39, CicholasNage_39, Clautastrophe_39, DirkDirk_38, DyoEdafos_40, Ellson_39, Enceladus_38, Finnry_39, Halena_38, Jubie_39, Kingsolomon_39, KirDoubleO7_37, Krypton555_39, Lumos_39, MAckerman_39, Moostard_39, MsGreen_39, Nicholas_39, OhShagHennessy_38, Poochiewood_38, Red305_39, Rose5_38, Silverleaf_38, Snenia_39, TriFive_39, Tyson_38, Wamburgrxpress_39, Wyatt2_39, Zaria_39,

Genes that have the "Most Annotated" start but do not call it:
• BrainDrainer_39, Breezona_41, Bromden_40, Douge_38, Douzhi_38, DuncansLeg_39, Faith1_41, JoeDirt_38, Kahlid_41, Kropertea_39, LeBron_39, Lewan_41, LilDestine_41, Loadrie_41, MiniLon_39, MiniMac_39, MkaliMitinis3_41, PYPDinur_38, Rumpelstiltskin_41, Sarshaun_41, Sheng711_39, UPIE_39, Whirlwind_40, Wigglewiggle_41, Winky_41,

Genes that do not have the "Most Annotated" start:
• Agent47_43, AlleyCat_43, Aminay_47, BananenDer11_43, BoostSeason_47, Collard_42, Dadosky_43, DismalFunk_47, DismalStressor_47, Doughnut_47, Edugator_42, Feyre_43, Findley_47, Gengar_42, Guillsminger_43, Heftyboy_42, InvictusManeo_42, Kratio_41, Larva_43, Leston_42, LilDirt_42, Marcoliusprime_47, Milly_47, Miryou_44, Mufasa_47, OkiRoe_42, Omnicron_45, Paola_42, Phrappuccino_41, Psycho_43, Rando14_44, Ruthiejr_49, Settecandela_41, SoSeph_42, Strobilo_47, TM4_42, Thyatira_44, Unicorn_46, ViviJ_42, Waterfoul_43, ZoeJ_46,

Summary by start number:

Start 5:
• Found in 1 of 102 (1.0%) of genes in pham

• Manual Annotations of this start: 1 of 92
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Unicorn_46 (K6),

Start 6:
• Found in 1 of 102 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 92
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Ruthiejr_49 (K4),

Start 7:
• Found in 17 of 102 (16.7%) of genes in pham
• Manual Annotations of this start: 13 of 92
• Called 76.5% of time when present
• Phage (with cluster) where this start called: Collard_42 (K5), Gengar_42 (K5), Guillsminger_43 (K5), Heftyboy_42 (K5), InvictusManeo_42 (K5), Kratio_41 (K5), Miryou_44 (K5), OkiRoe_42 (K5), Paola_42 (K5), SoSeph_42 (K5), Thyatira_44 (K5), ViviJ_42 (K5), Waterfoul_43 (K5),

Start 9:
• Found in 9 of 102 (8.8%) of genes in pham
• Manual Annotations of this start: 1 of 92
• Called 22.2% of time when present
• Phage (with cluster) where this start called: Kropertea_39 (L4), Sheng711_39 (L4),

Start 10:
• Found in 1 of 102 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 92
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aminay_47 (K7),

Start 12:
• Found in 16 of 102 (15.7%) of genes in pham
• Manual Annotations of this start: 4 of 92
• Called 25.0% of time when present
• Phage (with cluster) where this start called: DuncansLeg_39 (L3), MiniLon_39 (L3), MiniMac_39 (L3), Whirlwind_40 (L3),

Start 14:
• Found in 20 of 102 (19.6%) of genes in pham
• Manual Annotations of this start: 3 of 92
• Called 15.0% of time when present
• Phage (with cluster) where this start called: JoeDirt_38 (L1), LeBron_39 (L1), UPIE_39 (L1),

Start 15:
• Found in 25 of 102 (24.5%) of genes in pham
• Manual Annotations of this start: 12 of 92
• Called 48.0% of time when present
• Phage (with cluster) where this start called: Agent47_43 (K5), AlleyCat_43 (K5), BananenDer11_43 (K5), Dadosky_43 (K5), Edugator_42 (K5), Feyre_43 (K5), Larva_43 (K5), Leston_42 (K5), LilDirt_42 (K5), Omnicron_45 (K5), Psycho_43 (K5), Rando14_44 (K5),

Start 17:
• Found in 3 of 102 (2.9%) of genes in pham
• Manual Annotations of this start: 2 of 92
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Phrappuccino_41 (AA), Settecandela_41 (AA),

Start 18:
• Found in 9 of 102 (8.8%) of genes in pham
• No Manual Annotations of this start.
• Called 11.1% of time when present
• Phage (with cluster) where this start called: PYPDinur_38 (L4),

Start 19:
• Found in 2 of 102 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 92
• Called 50.0% of time when present
• Phage (with cluster) where this start called: TM4_42 (K2),

Start 20:
• Found in 20 of 102 (19.6%) of genes in pham
• Manual Annotations of this start: 8 of 92
• Called 40.0% of time when present
• Phage (with cluster) where this start called: Breezona_41 (L2), Bromden_40 (L4), Faith1_41 (L2), Kahlid_41 (L2), Loadrie_41 (L2), Rumpelstiltskin_41 (L2), Wigglewiggle_41 (L2), Winky_41 (L2),

Start 22:
• Found in 11 of 102 (10.8%) of genes in pham
• Manual Annotations of this start: 3 of 92
• Called 36.4% of time when present
• Phage (with cluster) where this start called: Lewan_41 (L2), LilDestine_41 (L2), MkaliMitinis3_41 (L2), Sarshaun_41 (L2),

Start 23:
• Found in 10 of 102 (9.8%) of genes in pham
• Manual Annotations of this start: 1 of 92
• Called 30.0% of time when present
• Phage (with cluster) where this start called: BrainDrainer_39 (L4), Douge_38 (L4), Douzhi_38 (L4),

Start 24:
• Found in 61 of 102 (59.8%) of genes in pham
• Manual Annotations of this start: 31 of 92
• Called 59.0% of time when present
• Phage (with cluster) where this start called: Acquire49_39 (L1), Appletree2_38 (L1), AvadaKedavra_39 (L1), Bellis_39 (L3), BourbonZero_38 (L3), Calm_39 (L1), Chaser_38 (L4), ChutneyChips_39 (L4), CicholasNage_39 (L1), Clautastrophe_39 (L3), DirkDirk_38 (L1), DyoEdafos_40 (L4), Ellson_39 (L3), Enceladus_38 (L1), Finnry_39 (L3), Halena_38 (L1), Jubie_39 (L3), Kingsolomon_39 (L3), KirDoubleO7_37 (L3), Krypton555_39 (L3), Lumos_39 (L3), MAckerman_39 (L1), Moostard_39 (L3), MsGreen_39 (L3), Nicholas_39 (L3), OhShagHennessy_38 (L1),

Poochiewood_38 (L1), Red305_39 (L3), Rose5_38 (L1), Silverleaf_38 (L1), Snenia_39 (L3), TriFive_39 (L3), Tyson_38 (L1), Wamburgrxpress_39 (L1), Wyatt2_39 (L1), Zaria_39 (L1),

Start 25:
• Found in 11 of 102 (10.8%) of genes in pham
• Manual Annotations of this start: 5 of 92
• Called 45.5% of time when present
• Phage (with cluster) where this start called: BoostSeason_47 (K2), DismalFunk_47 (K2), Marcoliusprime_47 (K2), Mufasa_47 (K2), Strobilo_47 (K2),

Start 26:
• Found in 11 of 102 (10.8%) of genes in pham
• Manual Annotations of this start: 4 of 92
• Called 36.4% of time when present
• Phage (with cluster) where this start called: DismalStressor_47 (K2), Findley_47 (K2), Milly_47 (K2), ZoeJ_46 (K2),

Start 27:
• Found in 16 of 102 (15.7%) of genes in pham
• Manual Annotations of this start: 1 of 92
• Called 6.2% of time when present
• Phage (with cluster) where this start called: Doughnut_47 (K2),

Summary by clusters:

There are 10 clusters represented in this pham: AA, K4, K2, L4, L2, L3, K5, L1, K7, K6,

Info for manual annotations of cluster AA:
•Start number 17 was manually annotated 2 times for cluster AA.

Info for manual annotations of cluster K2:
•Start number 19 was manually annotated 1 time for cluster K2.
•Start number 25 was manually annotated 5 times for cluster K2.
•Start number 26 was manually annotated 4 times for cluster K2.
•Start number 27 was manually annotated 1 time for cluster K2.

Info for manual annotations of cluster K4:
•Start number 6 was manually annotated 1 time for cluster K4.

Info for manual annotations of cluster K5:
•Start number 7 was manually annotated 13 times for cluster K5.
•Start number 15 was manually annotated 12 times for cluster K5.

Info for manual annotations of cluster K6:
•Start number 5 was manually annotated 1 time for cluster K6.

Info for manual annotations of cluster K7:
•Start number 10 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster L1:
•Start number 14 was manually annotated 3 times for cluster L1.

•Start number 24 was manually annotated 16 times for cluster L1.

Info for manual annotations of cluster L2:
•Start number 20 was manually annotated 7 times for cluster L2.
•Start number 22 was manually annotated 3 times for cluster L2.

Info for manual annotations of cluster L3:
•Start number 12 was manually annotated 4 times for cluster L3.
•Start number 24 was manually annotated 12 times for cluster L3.

Info for manual annotations of cluster L4:
•Start number 9 was manually annotated 1 time for cluster L4.
•Start number 20 was manually annotated 1 time for cluster L4.
•Start number 23 was manually annotated 1 time for cluster L4.
•Start number 24 was manually annotated 3 times for cluster L4.

Gene Information:

Gene: Acquire49_39 Start: 33043, Stop: 33345, Start Num: 24
Candidate Starts for Acquire49_39:
(Start: 14 @33007 has 3 MA's), (Start: 24 @33043 has 31 MA's), (37, 33178), (40, 33226), (42, 33235), (43, 33238), (44, 33256), (45, 33262), (52, 33307),

Gene: Agent47_43 Start: 34663, Stop: 35010, Start Num: 15
Candidate Starts for Agent47_43:
(Start: 7 @34624 has 13 MA's), (Start: 15 @34663 has 12 MA's), (29, 34729), (36, 34822), (39, 34879), (40, 34885), (43, 34897), (46, 34930), (56, 34990),

Gene: AlleyCat_43 Start: 34517, Stop: 34864, Start Num: 15
Candidate Starts for AlleyCat_43:
(Start: 15 @34517 has 12 MA's), (29, 34583), (36, 34676), (39, 34733), (40, 34739), (43, 34751), (54, 34832), (56, 34844),

Gene: Aminay_47 Start: 36566, Stop: 36913, Start Num: 10
Candidate Starts for Aminay_47:
(Start: 10 @36566 has 1 MA's), (Start: 17 @36599 has 2 MA's), (Start: 19 @36608 has 1 MA's), (Start: 27 @36647 has 1 MA's), (44, 36845),

Gene: Appletree2_38 Start: 32985, Stop: 33272, Start Num: 24
Candidate Starts for Appletree2_38:
(Start: 14 @32949 has 3 MA's), (Start: 24 @32985 has 31 MA's), (36, 33105), (37, 33120), (39, 33162), (40, 33168), (43, 33180), (44, 33198), (45, 33204), (57, 33267),

Gene: AvadaKedavra_39 Start: 33052, Stop: 33354, Start Num: 24
Candidate Starts for AvadaKedavra_39:
(Start: 14 @33016 has 3 MA's), (Start: 24 @33052 has 31 MA's), (37, 33187), (40, 33235), (42, 33244), (43, 33247), (44, 33265), (45, 33271), (52, 33316),

Gene: BananenDer11_43 Start: 34624, Stop: 34971, Start Num: 15
Candidate Starts for BananenDer11_43:

(Start: 7 @34585 has 13 MA's), (Start: 15 @34624 has 12 MA's), (29, 34690), (36, 34783), (39, 34840), (40, 34846), (43, 34858), (46, 34891), (56, 34951),

Gene: Bellis_39 Start: 34657, Stop: 34956, Start Num: 24
Candidate Starts for Bellis_39:
(Start: 24 @34657 has 31 MA's), (34, 34744), (35, 34768), (40, 34840), (43, 34852),

Gene: BoostSeason_47 Start: 36788, Stop: 37108, Start Num: 25
Candidate Starts for BoostSeason_47:
(Start: 25 @36788 has 5 MA's), (Start: 26 @36791 has 4 MA's), (Start: 27 @36800 has 1 MA's), (36, 36905), (40, 36968), (44, 36998), (51, 37049), (55, 37076), (58, 37091), (59, 37097),

Gene: BourbonZero_38 Start: 34636, Stop: 34935, Start Num: 24
Candidate Starts for BourbonZero_38:
(Start: 12 @34597 has 4 MA's), (Start: 24 @34636 has 31 MA's), (34, 34723), (35, 34747), (40, 34819), (43, 34831), (44, 34849),

Gene: BrainDrainer_39 Start: 33307, Stop: 33618, Start Num: 23
Candidate Starts for BrainDrainer_39:
(Start: 9 @33259 has 1 MA's), (Start: 12 @33280 has 4 MA's), (18, 33298), (Start: 20 @33301 has 8 MA's), (Start: 23 @33307 has 1 MA's), (Start: 24 @33319 has 31 MA's), (31, 33376), (36, 33439), (39, 33496), (43, 33514), (47, 33550),

Gene: Breezona_41 Start: 34392, Stop: 34697, Start Num: 20
Candidate Starts for Breezona_41:
(Start: 20 @34392 has 8 MA's), (Start: 22 @34398 has 3 MA's), (Start: 24 @34410 has 31 MA's), (31, 34467), (39, 34587), (40, 34593), (43, 34605), (56, 34686),

Gene: Bromden_40 Start: 33855, Stop: 34172, Start Num: 20
Candidate Starts for Bromden_40:
(Start: 20 @33855 has 8 MA's), (Start: 23 @33861 has 1 MA's), (Start: 24 @33873 has 31 MA's), (39, 34050), (43, 34068), (53, 34140), (57, 34167),

Gene: Calm_39 Start: 33058, Stop: 33360, Start Num: 24
Candidate Starts for Calm_39:
(Start: 14 @33022 has 3 MA's), (Start: 24 @33058 has 31 MA's), (37, 33193), (40, 33241), (42, 33250), (43, 33253), (44, 33271), (45, 33277), (52, 33322),

Gene: Chaser_38 Start: 33136, Stop: 33435, Start Num: 24
Candidate Starts for Chaser_38:
(Start: 9 @33076 has 1 MA's), (Start: 12 @33097 has 4 MA's), (18, 33115), (Start: 20 @33118 has 8 MA's), (Start: 23 @33124 has 1 MA's), (Start: 24 @33136 has 31 MA's), (31, 33193), (36, 33256), (39, 33313), (43, 33331), (47, 33367),

Gene: ChutneyChips_39 Start: 33316, Stop: 33615, Start Num: 24
Candidate Starts for ChutneyChips_39:
(Start: 9 @33256 has 1 MA's), (Start: 12 @33277 has 4 MA's), (18, 33295), (Start: 20 @33298 has 8 MA's), (Start: 23 @33304 has 1 MA's), (Start: 24 @33316 has 31 MA's), (31, 33373), (43, 33511), (50, 33577),

Gene: CicholasNage_39 Start: 33079, Stop: 33381, Start Num: 24
Candidate Starts for CicholasNage_39:

(Start: 14 @33043 has 3 MA's), (Start: 24 @33079 has 31 MA's), (37, 33214), (40, 33262), (42, 33271), (43, 33274), (44, 33292), (45, 33298), (52, 33343),

Gene: Clautastrophe_39 Start: 34655, Stop: 34954, Start Num: 24
Candidate Starts for Clautastrophe_39:
(Start: 24 @34655 has 31 MA's), (34, 34742), (40, 34838), (43, 34850),

Gene: Collard_42 Start: 34585, Stop: 34971, Start Num: 7
Candidate Starts for Collard_42:
(Start: 7 @34585 has 13 MA's), (Start: 15 @34624 has 12 MA's), (29, 34690), (36, 34783), (39, 34840), (40, 34846), (43, 34858), (46, 34891), (56, 34951),

Gene: Dadosky_43 Start: 34519, Stop: 34866, Start Num: 15
Candidate Starts for Dadosky_43:
(Start: 15 @34519 has 12 MA's), (29, 34585), (36, 34678), (39, 34735), (40, 34741), (43, 34753), (54, 34834), (56, 34846),

Gene: DirkDirk_38 Start: 33045, Stop: 33332, Start Num: 24
Candidate Starts for DirkDirk_38:
(Start: 14 @33009 has 3 MA's), (Start: 24 @33045 has 31 MA's), (36, 33165), (37, 33180), (39, 33222), (40, 33228), (43, 33240), (44, 33258), (45, 33264), (57, 33327),

Gene: DismalFunk_47 Start: 37222, Stop: 37542, Start Num: 25
Candidate Starts for DismalFunk_47:
(Start: 25 @37222 has 5 MA's), (Start: 26 @37225 has 4 MA's), (Start: 27 @37234 has 1 MA's), (36, 37339), (40, 37402), (44, 37432), (55, 37510), (58, 37525), (59, 37531),

Gene: DismalStressor_47 Start: 37225, Stop: 37542, Start Num: 26
Candidate Starts for DismalStressor_47:
(Start: 25 @37222 has 5 MA's), (Start: 26 @37225 has 4 MA's), (Start: 27 @37234 has 1 MA's), (36, 37339), (40, 37402), (44, 37432), (55, 37510), (58, 37525), (59, 37531),

Gene: Douge_38 Start: 33062, Stop: 33373, Start Num: 23
Candidate Starts for Douge_38:
(Start: 9 @33014 has 1 MA's), (Start: 12 @33035 has 4 MA's), (18, 33053), (Start: 20 @33056 has 8 MA's), (Start: 23 @33062 has 1 MA's), (Start: 24 @33074 has 31 MA's), (31, 33131), (39, 33251), (43, 33269), (47, 33305),

Gene: Doughnut_47 Start: 36847, Stop: 37155, Start Num: 27
Candidate Starts for Doughnut_47:
(Start: 25 @36835 has 5 MA's), (Start: 26 @36838 has 4 MA's), (Start: 27 @36847 has 1 MA's), (36, 36952), (40, 37015), (44, 37045), (51, 37096), (55, 37123), (58, 37138), (59, 37144),

Gene: Douzhi_38 Start: 33168, Stop: 33479, Start Num: 23
Candidate Starts for Douzhi_38:
(Start: 9 @33120 has 1 MA's), (Start: 12 @33141 has 4 MA's), (18, 33159), (Start: 20 @33162 has 8 MA's), (Start: 23 @33168 has 1 MA's), (Start: 24 @33180 has 31 MA's), (31, 33237), (36, 33300), (39, 33357), (43, 33375), (47, 33411),

Gene: DuncansLeg_39 Start: 34634, Stop: 34972, Start Num: 12
Candidate Starts for DuncansLeg_39:
(Start: 12 @34634 has 4 MA's), (Start: 24 @34673 has 31 MA's), (34, 34760), (35, 34784), (40, 34856), (43, 34868), (44, 34886),

Gene: DyoEdafos_40 Start: 33408, Stop: 33707, Start Num: 24
Candidate Starts for DyoEdafos_40:
(Start: 9 @33348 has 1 MA's), (Start: 12 @33369 has 4 MA's), (18, 33387), (Start: 20 @33390 has 8 MA's), (Start: 23 @33396 has 1 MA's), (Start: 24 @33408 has 31 MA's), (39, 33585), (43, 33603),

Gene: Edugator_42 Start: 34944, Stop: 35291, Start Num: 15
Candidate Starts for Edugator_42:
(Start: 15 @34944 has 12 MA's), (29, 35010), (36, 35103), (39, 35160), (40, 35166), (43, 35178), (54, 35259), (56, 35271),

Gene: Ellson_39 Start: 34649, Stop: 34948, Start Num: 24
Candidate Starts for Ellson_39:
(Start: 12 @34610 has 4 MA's), (Start: 24 @34649 has 31 MA's), (34, 34736), (35, 34760), (40, 34832), (43, 34844), (44, 34862),

Gene: Enceladus_38 Start: 33028, Stop: 33315, Start Num: 24
Candidate Starts for Enceladus_38:
(Start: 14 @32992 has 3 MA's), (Start: 24 @33028 has 31 MA's), (36, 33148), (37, 33163), (39, 33205), (40, 33211), (43, 33223), (44, 33241), (45, 33247), (57, 33310),

Gene: Faith1_41 Start: 34392, Stop: 34697, Start Num: 20
Candidate Starts for Faith1_41:
(Start: 20 @34392 has 8 MA's), (Start: 22 @34398 has 3 MA's), (Start: 24 @34410 has 31 MA's), (31, 34467), (39, 34587), (40, 34593), (43, 34605), (56, 34686),

Gene: Feyre_43 Start: 35869, Stop: 36216, Start Num: 15
Candidate Starts for Feyre_43:
(Start: 15 @35869 has 12 MA's), (43, 36103), (44, 36121), (46, 36136), (56, 36196),

Gene: Findley_47 Start: 37218, Stop: 37535, Start Num: 26
Candidate Starts for Findley_47:
(Start: 25 @37215 has 5 MA's), (Start: 26 @37218 has 4 MA's), (Start: 27 @37227 has 1 MA's), (36, 37332), (40, 37395), (44, 37425), (55, 37503), (58, 37518), (59, 37524),

Gene: Finnry_39 Start: 34658, Stop: 34957, Start Num: 24
Candidate Starts for Finnry_39:
(Start: 24 @34658 has 31 MA's), (34, 34745), (35, 34769), (40, 34841), (43, 34853),

Gene: Gengar_42 Start: 34445, Stop: 34831, Start Num: 7
Candidate Starts for Gengar_42:
(Start: 7 @34445 has 13 MA's), (Start: 15 @34484 has 12 MA's), (43, 34718), (44, 34736), (46, 34751), (56, 34811),

Gene: Guillsminger_43 Start: 34416, Stop: 34802, Start Num: 7
Candidate Starts for Guillsminger_43:
(Start: 7 @34416 has 13 MA's), (Start: 15 @34455 has 12 MA's), (43, 34689), (44, 34707), (46, 34722), (56, 34782),

Gene: Halena_38 Start: 33054, Stop: 33356, Start Num: 24
Candidate Starts for Halena_38:
(Start: 14 @33018 has 3 MA's), (Start: 24 @33054 has 31 MA's), (37, 33189), (40, 33237), (42, 33246), (43, 33249), (44, 33267), (45, 33273), (52, 33318),

Gene: Heftyboy_42 Start: 34566, Stop: 34952, Start Num: 7
Candidate Starts for Heftyboy_42:
(Start: 7 @34566 has 13 MA's), (Start: 15 @34605 has 12 MA's), (43, 34839), (44, 34857), (46, 34872), (56, 34932),

Gene: InvictusManeo_42 Start: 34628, Stop: 35014, Start Num: 7
Candidate Starts for InvictusManeo_42:
(Start: 7 @34628 has 13 MA's), (Start: 15 @34667 has 12 MA's), (29, 34733), (36, 34826), (39, 34883), (40, 34889), (43, 34901), (46, 34934), (56, 34994),

Gene: JoeDirt_38 Start: 32990, Stop: 33313, Start Num: 14
Candidate Starts for JoeDirt_38:
(Start: 14 @32990 has 3 MA's), (Start: 24 @33026 has 31 MA's), (36, 33146), (37, 33161), (39, 33203), (40, 33209), (43, 33221), (44, 33239), (45, 33245), (57, 33308),

Gene: Jubie_39 Start: 34656, Stop: 34955, Start Num: 24
Candidate Starts for Jubie_39:
(Start: 24 @34656 has 31 MA's), (34, 34743), (40, 34839), (43, 34851),

Gene: Kahlid_41 Start: 34398, Stop: 34703, Start Num: 20
Candidate Starts for Kahlid_41:
(Start: 20 @34398 has 8 MA's), (Start: 22 @34404 has 3 MA's), (Start: 24 @34416 has 31 MA's), (31, 34473), (39, 34593), (40, 34599), (43, 34611), (48, 34665), (56, 34692),

Gene: Kingsolomon_39 Start: 34655, Stop: 34954, Start Num: 24
Candidate Starts for Kingsolomon_39:
(Start: 24 @34655 has 31 MA's), (34, 34742), (40, 34838), (43, 34850),

Gene: KirDoubleO7_37 Start: 34677, Stop: 34976, Start Num: 24
Candidate Starts for KirDoubleO7_37:
(Start: 12 @34638 has 4 MA's), (Start: 24 @34677 has 31 MA's), (34, 34764), (35, 34788), (40, 34860), (43, 34872), (44, 34890),

Gene: Kratio_41 Start: 34179, Stop: 34565, Start Num: 7
Candidate Starts for Kratio_41:
(Start: 7 @34179 has 13 MA's), (Start: 15 @34218 has 12 MA's), (29, 34284), (36, 34377), (39, 34434), (40, 34440), (43, 34452), (46, 34485), (56, 34545),

Gene: Kropertea_39 Start: 33171, Stop: 33530, Start Num: 9
Candidate Starts for Kropertea_39:
(Start: 9 @33171 has 1 MA's), (18, 33210), (Start: 20 @33213 has 8 MA's), (Start: 23 @33219 has 1 MA's), (Start: 24 @33231 has 31 MA's), (39, 33408), (43, 33426),

Gene: Krypton555_39 Start: 34572, Stop: 34871, Start Num: 24
Candidate Starts for Krypton555_39:
(Start: 12 @34533 has 4 MA's), (Start: 24 @34572 has 31 MA's), (34, 34659), (35, 34683), (40, 34755), (43, 34767), (52, 34836),

Gene: Larva_43 Start: 34386, Stop: 34733, Start Num: 15
Candidate Starts for Larva_43:
(Start: 15 @34386 has 12 MA's), (29, 34452), (36, 34545), (39, 34602), (40, 34608), (43, 34620), (54, 34701), (56, 34713),

Gene: LeBron_39 Start: 33034, Stop: 33357, Start Num: 14
Candidate Starts for LeBron_39:
(Start: 14 @33034 has 3 MA's), (Start: 24 @33070 has 31 MA's), (36, 33190), (37, 33205), (39, 33247), (40, 33253), (43, 33265), (44, 33283), (45, 33289), (57, 33352),

Gene: Leston_42 Start: 34584, Stop: 34931, Start Num: 15
Candidate Starts for Leston_42:
(Start: 7 @34545 has 13 MA's), (Start: 15 @34584 has 12 MA's), (43, 34818), (44, 34836), (46, 34851), (56, 34911),

Gene: Lewan_41 Start: 34391, Stop: 34690, Start Num: 22
Candidate Starts for Lewan_41:
(Start: 22 @34391 has 3 MA's), (Start: 24 @34403 has 31 MA's), (31, 34460), (39, 34580), (40, 34586), (43, 34598), (56, 34679),

Gene: LilDestine_41 Start: 34396, Stop: 34695, Start Num: 22
Candidate Starts for LilDestine_41:
(Start: 20 @34390 has 8 MA's), (Start: 22 @34396 has 3 MA's), (Start: 24 @34408 has 31 MA's), (31, 34465), (39, 34585), (40, 34591), (43, 34603), (56, 34684),

Gene: LilDirt_42 Start: 34425, Stop: 34772, Start Num: 15
Candidate Starts for LilDirt_42:
(Start: 7 @34386 has 13 MA's), (Start: 15 @34425 has 12 MA's), (29, 34491), (36, 34584), (39, 34641), (40, 34647), (43, 34659), (46, 34692), (56, 34752),

Gene: Loadrie_41 Start: 34424, Stop: 34729, Start Num: 20
Candidate Starts for Loadrie_41:
(Start: 20 @34424 has 8 MA's), (Start: 22 @34430 has 3 MA's), (Start: 24 @34442 has 31 MA's), (31, 34499), (39, 34619), (40, 34625), (43, 34637), (48, 34691), (56, 34718),

Gene: Lumos_39 Start: 34652, Stop: 34951, Start Num: 24
Candidate Starts for Lumos_39:
(Start: 24 @34652 has 31 MA's), (34, 34739), (40, 34835), (43, 34847),

Gene: MAckerman_39 Start: 33048, Stop: 33350, Start Num: 24
Candidate Starts for MAckerman_39:
(Start: 14 @33012 has 3 MA's), (Start: 24 @33048 has 31 MA's), (37, 33183), (40, 33231), (42, 33240), (43, 33243), (44, 33261), (45, 33267), (52, 33312),

Gene: Marcoliusprime_47 Start: 37222, Stop: 37542, Start Num: 25
Candidate Starts for Marcoliusprime_47:
(Start: 25 @37222 has 5 MA's), (Start: 26 @37225 has 4 MA's), (Start: 27 @37234 has 1 MA's), (36, 37339), (40, 37402), (44, 37432), (55, 37510), (58, 37525), (59, 37531),

Gene: Milly_47 Start: 37198, Stop: 37515, Start Num: 26
Candidate Starts for Milly_47:
(Start: 25 @37195 has 5 MA's), (Start: 26 @37198 has 4 MA's), (Start: 27 @37207 has 1 MA's), (36, 37312), (40, 37375), (44, 37405), (55, 37483), (58, 37498), (59, 37504),

Gene: MiniLon_39 Start: 34425, Stop: 34763, Start Num: 12
Candidate Starts for MiniLon_39:

(Start: 12 @34425 has 4 MA's), (Start: 24 @34464 has 31 MA's), (34, 34551), (35, 34575), (40, 34647), (43, 34659), (44, 34677),

Gene: MiniMac_39 Start: 34422, Stop: 34760, Start Num: 12
Candidate Starts for MiniMac_39:
(8, 34392), (Start: 12 @34422 has 4 MA's), (Start: 24 @34461 has 31 MA's), (34, 34548), (35, 34572), (40, 34644), (43, 34656), (44, 34674),

Gene: Miryou_44 Start: 36748, Stop: 37134, Start Num: 7
Candidate Starts for Miryou_44:
(Start: 7 @36748 has 13 MA's), (Start: 15 @36787 has 12 MA's), (43, 37021), (44, 37039), (46, 37054), (56, 37114),

Gene: MkaliMitinis3_41 Start: 34400, Stop: 34699, Start Num: 22
Candidate Starts for MkaliMitinis3_41:
(Start: 20 @34394 has 8 MA's), (Start: 22 @34400 has 3 MA's), (Start: 24 @34412 has 31 MA's), (31, 34469), (39, 34589), (40, 34595), (43, 34607), (56, 34688),

Gene: Moostard_39 Start: 34657, Stop: 34956, Start Num: 24
Candidate Starts for Moostard_39:
(Start: 24 @34657 has 31 MA's), (34, 34744), (35, 34768), (40, 34840), (43, 34852),

Gene: MsGreen_39 Start: 34655, Stop: 34954, Start Num: 24
Candidate Starts for MsGreen_39:
(Start: 24 @34655 has 31 MA's), (34, 34742), (40, 34838), (43, 34850),

Gene: Mufasa_47 Start: 36779, Stop: 37099, Start Num: 25
Candidate Starts for Mufasa_47:
(Start: 25 @36779 has 5 MA's), (Start: 26 @36782 has 4 MA's), (Start: 27 @36791 has 1 MA's), (36, 36896), (40, 36959), (44, 36989), (51, 37040), (55, 37067), (58, 37082), (59, 37088),

Gene: Nicholas_39 Start: 34655, Stop: 34954, Start Num: 24
Candidate Starts for Nicholas_39:
(Start: 24 @34655 has 31 MA's), (34, 34742), (40, 34838), (43, 34850),

Gene: OhShagHennessy_38 Start: 33016, Stop: 33303, Start Num: 24
Candidate Starts for OhShagHennessy_38:
(Start: 14 @32980 has 3 MA's), (Start: 24 @33016 has 31 MA's), (36, 33136), (37, 33151), (39, 33193), (40, 33199), (43, 33211), (44, 33229), (45, 33235), (57, 33298),

Gene: OkiRoe_42 Start: 34418, Stop: 34804, Start Num: 7
Candidate Starts for OkiRoe_42:
(Start: 7 @34418 has 13 MA's), (Start: 15 @34457 has 12 MA's), (43, 34691), (44, 34709), (46, 34724), (56, 34784),

Gene: Omnicron_45 Start: 34067, Stop: 34414, Start Num: 15
Candidate Starts for Omnicron_45:
(11, 34046), (Start: 15 @34067 has 12 MA's), (28, 34124), (40, 34289), (43, 34301), (47, 34337), (56, 34394),

Gene: PYPDinur_38 Start: 33159, Stop: 33479, Start Num: 18
Candidate Starts for PYPDinur_38:

(Start: 9 @33120 has 1 MA's), (Start: 12 @33141 has 4 MA's), (18, 33159), (Start: 20 @33162 has 8 MA's), (Start: 23 @33168 has 1 MA's), (Start: 24 @33180 has 31 MA's), (31, 33237), (36, 33300), (39, 33357), (43, 33375), (47, 33411),

Gene: Paola_42 Start: 34416, Stop: 34802, Start Num: 7
Candidate Starts for Paola_42:
(Start: 7 @34416 has 13 MA's), (Start: 15 @34455 has 12 MA's), (43, 34689), (44, 34707), (46, 34722), (56, 34782),

Gene: Phrappuccino_41 Start: 23047, Stop: 23388, Start Num: 17
Candidate Starts for Phrappuccino_41:
(Start: 17 @23047 has 2 MA's), (Start: 27 @23095 has 1 MA's), (30, 23110), (33, 23149), (40, 23266), (47, 23314), (49, 23344),

Gene: Poochiewood_38 Start: 33044, Stop: 33331, Start Num: 24
Candidate Starts for Poochiewood_38:
(Start: 14 @33008 has 3 MA's), (Start: 24 @33044 has 31 MA's), (36, 33164), (37, 33179), (39, 33221), (40, 33227), (43, 33239), (44, 33257), (45, 33263), (57, 33326),

Gene: Psycho_43 Start: 34516, Stop: 34863, Start Num: 15
Candidate Starts for Psycho_43:
(Start: 15 @34516 has 12 MA's), (29, 34582), (36, 34675), (39, 34732), (40, 34738), (43, 34750), (54, 34831), (56, 34843),

Gene: Rando14_44 Start: 33637, Stop: 33984, Start Num: 15
Candidate Starts for Rando14_44:
(1, 33382), (2, 33388), (3, 33391), (4, 33415), (11, 33616), (Start: 15 @33637 has 12 MA's), (28, 33694), (40, 33859), (43, 33871), (56, 33964),

Gene: Red305_39 Start: 34655, Stop: 34954, Start Num: 24
Candidate Starts for Red305_39:
(Start: 24 @34655 has 31 MA's), (34, 34742), (40, 34838), (43, 34850),

Gene: Rose5_38 Start: 33043, Stop: 33345, Start Num: 24
Candidate Starts for Rose5_38:
(Start: 14 @33007 has 3 MA's), (Start: 24 @33043 has 31 MA's), (37, 33178), (40, 33226), (42, 33235), (43, 33238), (44, 33256), (45, 33262), (52, 33307),

Gene: Rumpelstiltskin_41 Start: 34659, Stop: 34964, Start Num: 20
Candidate Starts for Rumpelstiltskin_41:
(Start: 20 @34659 has 8 MA's), (Start: 22 @34665 has 3 MA's), (Start: 24 @34677 has 31 MA's), (31, 34734), (39, 34854), (40, 34860), (43, 34872), (56, 34953),

Gene: Ruthiejr_49 Start: 36035, Stop: 36379, Start Num: 6
Candidate Starts for Ruthiejr_49:
(Start: 6 @36035 has 1 MA's), (16, 36077), (Start: 27 @36131 has 1 MA's), (40, 36302), (41, 36305),

Gene: Sarshaun_41 Start: 34432, Stop: 34731, Start Num: 22
Candidate Starts for Sarshaun_41:
(Start: 20 @34426 has 8 MA's), (Start: 22 @34432 has 3 MA's), (Start: 24 @34444 has 31 MA's), (31, 34501), (39, 34621), (40, 34627), (43, 34639), (48, 34693), (56, 34720),

Gene: Settecandela_41 Start: 23047, Stop: 23388, Start Num: 17

Candidate Starts for Settecandela_41:
(Start: 17 @23047 has 2 MA's), (Start: 27 @23095 has 1 MA's), (30, 23110), (33, 23149), (40, 23266), (47, 23314), (49, 23344),

Gene: Sheng711_39 Start: 33120, Stop: 33479, Start Num: 9
Candidate Starts for Sheng711_39:
(Start: 9 @33120 has 1 MA's), (Start: 12 @33141 has 4 MA's), (18, 33159), (Start: 20 @33162 has 8 MA's), (Start: 23 @33168 has 1 MA's), (Start: 24 @33180 has 31 MA's), (31, 33237), (36, 33300), (39, 33357), (43, 33375), (47, 33411),

Gene: Silverleaf_38 Start: 33043, Stop: 33345, Start Num: 24
Candidate Starts for Silverleaf_38:
(Start: 14 @33007 has 3 MA's), (Start: 24 @33043 has 31 MA's), (37, 33178), (40, 33226), (42, 33235), (43, 33238), (44, 33256), (45, 33262), (52, 33307),

Gene: Snenia_39 Start: 34656, Stop: 34955, Start Num: 24
Candidate Starts for Snenia_39:
(Start: 24 @34656 has 31 MA's), (34, 34743), (40, 34839), (43, 34851),

Gene: SoSeph_42 Start: 34566, Stop: 34952, Start Num: 7
Candidate Starts for SoSeph_42:
(Start: 7 @34566 has 13 MA's), (Start: 15 @34605 has 12 MA's), (43, 34839), (44, 34857), (46, 34872), (56, 34932),

Gene: Strobilo_47 Start: 37197, Stop: 37517, Start Num: 25
Candidate Starts for Strobilo_47:
(Start: 25 @37197 has 5 MA's), (Start: 26 @37200 has 4 MA's), (Start: 27 @37209 has 1 MA's), (36, 37314), (40, 37377), (44, 37407), (55, 37485), (58, 37500), (59, 37506),

Gene: TM4_42 Start: 31544, Stop: 31900, Start Num: 19
Candidate Starts for TM4_42:
(Start: 19 @31544 has 1 MA's), (21, 31547), (Start: 25 @31571 has 5 MA's), (Start: 26 @31574 has 4 MA's), (Start: 27 @31583 has 1 MA's), (36, 31688), (40, 31751), (44, 31781), (51, 31832), (55, 31859), (59, 31889),

Gene: Thyatira_44 Start: 36765, Stop: 37151, Start Num: 7
Candidate Starts for Thyatira_44:
(Start: 7 @36765 has 13 MA's), (Start: 15 @36804 has 12 MA's), (43, 37038), (44, 37056), (46, 37071), (56, 37131),

Gene: TriFive_39 Start: 34655, Stop: 34954, Start Num: 24
Candidate Starts for TriFive_39:
(Start: 24 @34655 has 31 MA's), (34, 34742), (40, 34838), (43, 34850),

Gene: Tyson_38 Start: 33044, Stop: 33346, Start Num: 24
Candidate Starts for Tyson_38:
(Start: 14 @33008 has 3 MA's), (Start: 24 @33044 has 31 MA's), (37, 33179), (40, 33227), (42, 33236), (43, 33239), (44, 33257), (45, 33263), (52, 33308),

Gene: UPIE_39 Start: 33006, Stop: 33329, Start Num: 14
Candidate Starts for UPIE_39:
(Start: 14 @33006 has 3 MA's), (Start: 24 @33042 has 31 MA's), (36, 33162), (37, 33177), (39, 33219), (40, 33225), (43, 33237), (44, 33255), (45, 33261), (57, 33324),

Gene: Unicorn_46 Start: 35029, Stop: 35373, Start Num: 5
Candidate Starts for Unicorn_46:
(Start: 5 @35029 has 1 MA's), (Start: 27 @35137 has 1 MA's), (32, 35188), (33, 35191), (37, 35257), (38, 35290),

Gene: ViviJ_42 Start: 34385, Stop: 34771, Start Num: 7
Candidate Starts for ViviJ_42:
(Start: 7 @34385 has 13 MA's), (Start: 15 @34424 has 12 MA's), (29, 34490), (36, 34583), (39, 34640), (40, 34646), (43, 34658), (46, 34691), (56, 34751),

Gene: Wamburgrxpress_39 Start: 33057, Stop: 33344, Start Num: 24
Candidate Starts for Wamburgrxpress_39:
(Start: 14 @33021 has 3 MA's), (Start: 24 @33057 has 31 MA's), (36, 33177), (37, 33192), (39, 33234), (40, 33240), (43, 33252), (44, 33270), (45, 33276), (57, 33339),

Gene: Waterfoul_43 Start: 34659, Stop: 35045, Start Num: 7
Candidate Starts for Waterfoul_43:
(Start: 7 @34659 has 13 MA's), (Start: 15 @34698 has 12 MA's), (43, 34932), (44, 34950), (46, 34965), (56, 35025),

Gene: Whirlwind_40 Start: 34375, Stop: 34713, Start Num: 12
Candidate Starts for Whirlwind_40:
(Start: 12 @34375 has 4 MA's), (Start: 24 @34414 has 31 MA's), (34, 34501), (35, 34525), (40, 34597), (43, 34609), (52, 34678),

Gene: Wigglewiggle_41 Start: 34425, Stop: 34730, Start Num: 20
Candidate Starts for Wigglewiggle_41:
(Start: 20 @34425 has 8 MA's), (Start: 22 @34431 has 3 MA's), (Start: 24 @34443 has 31 MA's), (31, 34500), (39, 34620), (40, 34626), (43, 34638), (48, 34692), (56, 34719),

Gene: Winky_41 Start: 34392, Stop: 34697, Start Num: 20
Candidate Starts for Winky_41:
(Start: 20 @34392 has 8 MA's), (Start: 22 @34398 has 3 MA's), (Start: 24 @34410 has 31 MA's), (31, 34467), (39, 34587), (40, 34593), (43, 34605), (56, 34686),

Gene: Wyatt2_39 Start: 33043, Stop: 33345, Start Num: 24
Candidate Starts for Wyatt2_39:
(Start: 14 @33007 has 3 MA's), (Start: 24 @33043 has 31 MA's), (37, 33178), (40, 33226), (42, 33235), (43, 33238), (44, 33256), (45, 33262), (52, 33307),

Gene: Zaria_39 Start: 33058, Stop: 33360, Start Num: 24
Candidate Starts for Zaria_39:
(Start: 14 @33022 has 3 MA's), (Start: 24 @33058 has 31 MA's), (37, 33193), (40, 33241), (42, 33250), (43, 33253), (44, 33271), (45, 33277), (52, 33322),

Gene: ZoeJ_46 Start: 36666, Stop: 36992, Start Num: 26
Candidate Starts for ZoeJ_46:
(13, 36615), (Start: 25 @36663 has 5 MA's), (Start: 26 @36666 has 4 MA's), (Start: 27 @36675 has 1 MA's), (36, 36780), (40, 36843), (44, 36873), (55, 36951), (59, 36981),