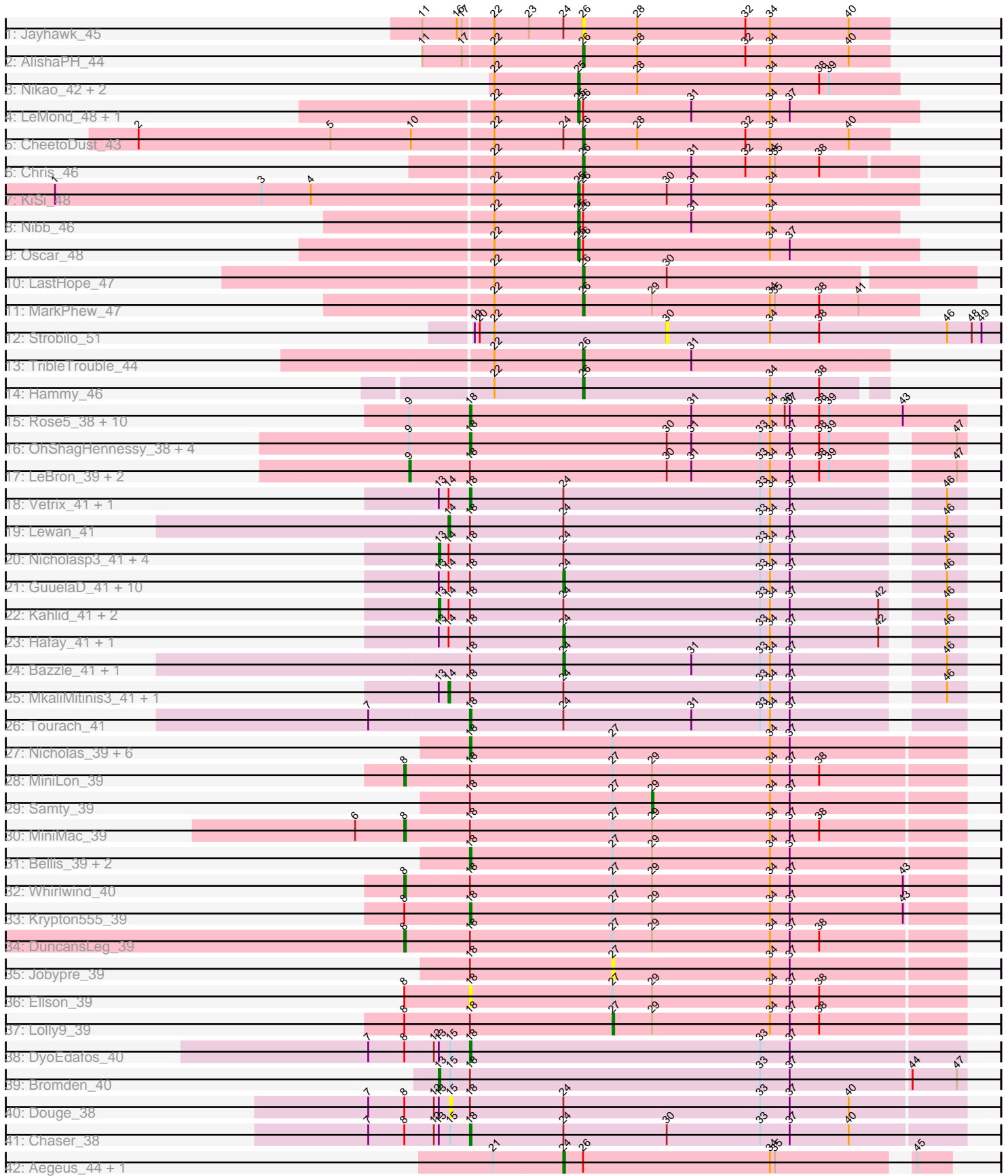


Pham 163516



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 163516 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163516 has 90 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Jayhawk_45
- Track 2 : AlishaPH_44
- Track 3 : Nikao_42, SgtBeansprout_39, Enkosi_42
- Track 4 : LeMond_48, Scarlett_48
- Track 5 : CheetoDust_43
- Track 6 : Chris_46
- Track 7 : KiSi_48
- Track 8 : Nibb_46
- Track 9 : Oscar_48
- Track 10 : LastHope_47
- Track 11 : MarkPhew_47
- Track 12 : Strobilo_51
- Track 13 : TribbleTrouble_44
- Track 14 : Hammy_46
- Track 15 : Rose5_38, Calm_39, Tyson_38, Halena_38, CicholasNage_39, Wyatt2_39, MAckerman_38, Zaria_39, Acquire49_39, Silverleaf_38, AvadaKedavra_39
- Track 16 : OhShagHennessy_38, Wamburggrxpress_39, Enceladus_38, Appletree2_38, DirkDirk_38
- Track 17 : LeBron_39, UPIE_39, JoeDirt_38
- Track 18 : Vetrix_41, DrSeegs_41
- Track 19 : Lewan_41
- Track 20 : Nicholasp3_41, Winky_41, Breezona_41, Rumpelstiltskin_41, Faith1_41
- Track 21 : GuuelaD_41, Crossroads_41, BobsGarage_41, Gabriela_41, Itos_40, Finemlucis_41, Gardann_41, Netyap_41, Zakai_41, BigCheese_41, Miley16_41
- Track 22 : Kahlid_41, Loadrie_41, Wigglewiggles_41
- Track 23 : Hafay_41, Wilder_41
- Track 24 : Bazzle_41, Archie_41
- Track 25 : MkaliMitinis3_41, LilDestine_41
- Track 26 : Tourach_41
- Track 27 : Nicholas_39, Lumos_39, Jubie_39, Snenia_39, Clautastrophe_39, MsGreen_39, Kingsolomon_39
- Track 28 : MiniLon_39
- Track 29 : Samty_39
- Track 30 : MiniMac_39
- Track 31 : Bellis_39, Moostard_39, Finnry_39
- Track 32 : Whirlwind_40

- Track 33 : Krypton555_39
- Track 34 : DuncansLeg_39
- Track 35 : Jobypre_39
- Track 36 : Ellson_39
- Track 37 : Lolly9_39
- Track 38 : DyoEdafos_40
- Track 39 : Bromden_40
- Track 40 : Douge_38
- Track 41 : Chaser_38
- Track 42 : Aegeus_44, Baudelaire_44

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

The start number called the most often in the published annotations is 18, it was called in 30 of the 82 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49_39, Appletree2_38, AvadaKedavra_39, Bellis_39, Calm_39, Chaser_38, CicholasNage_39, Clautastrophe_39, DirkDirk_38, DrSeegs_41, DyoEdafos_40, Ellson_39, Enceladus_38, Finnry_39, Halena_38, Jubie_39, Kingsolomon_39, Krypton555_39, Lumos_39, MAckerman_38, Moostard_39, MsGreen_39, Nicholas_39, OhShagHennessy_38, Rose5_38, Silverleaf_38, Snenia_39, Tourach_41, Tyson_38, Vetrix_41, Wamburgrxpress_39, Wyatt2_39, Zaria_39,

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

- Archie_41, Bazzle_41, BigCheese_41, BobsGarage_41, Breezona_41, Bromden_40, Crossroads_41, Douge_38, DuncansLeg_39, Faith1_41, Finemlucis_41, Gabriela_41, Gardann_41, GuuelaD_41, Hafay_41, Itos_40, Jobypre_39, JoeDirt_38, Kahlid_41, LeBron_39, Lewan_41, LilDestine_41, Loadrie_41, Lolly9_39, Miley16_41, MiniLon_39, MiniMac_39, MkaliMitinis3_41, Netyap_41, Nicholasp3_41, Rumpelstiltskin_41, Samty_39, UPIE_39, Whirlwind_40, Wigglewiggles_41, Wilder_41, Winky_41, Zakai_41,

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

- Aegeus_44, AlishaPH_44, Baudelaire_44, CheetoDust_43, Chris_46, Enkosi_42, Hammy_46, Jayhawk_45, KiSi_48, LastHope_47, LeMond_48, MarkPhew_47, Nibb_46, Nikao_42, Oscar_48, Scarlett_48, SgtBeansprout_39, Strobilo_51, TribbleTrouble_44,

Summary by start number:

Start 8:

- Found in 10 of 90 (11.1%) of genes in pham
- Manual Annotations of this start: 4 of 82
- Called 40.0% of time when present
- Phage (with cluster) where this start called: DuncansLeg_39 (L3), MiniLon_39 (L3), MiniMac_39 (L3), Whirlwind_40 (L3),

Start 9:

- Found in 19 of 90 (21.1%) of genes in pham

- Manual Annotations of this start: 3 of 82
- Called 15.8% of time when present
- Phage (with cluster) where this start called: JoeDirt_38 (L1), LeBron_39 (L1), UPIE_39 (L1),

Start 13:

- Found in 29 of 90 (32.2%) of genes in pham
- Manual Annotations of this start: 9 of 82
- Called 31.0% 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), Nicholasp3_41 (L2), Rumpelstiltskin_41 (L2), Wigglewiggle_41 (L2), Winky_41 (L2),

Start 14:

- Found in 26 of 90 (28.9%) of genes in pham
- Manual Annotations of this start: 3 of 82
- Called 11.5% of time when present
- Phage (with cluster) where this start called: Lewan_41 (L2), LilDestine_41 (L2), MkaliMitinis3_41 (L2),

Start 15:

- Found in 4 of 90 (4.4%) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Douge_38 (L4),

Start 18:

- Found in 71 of 90 (78.9%) of genes in pham
- Manual Annotations of this start: 30 of 82
- Called 46.5% of time when present
- Phage (with cluster) where this start called: Acquire49_39 (L1), Appletree2_38 (L1), AvadaKedavra_39 (L1), Bellis_39 (L3), Calm_39 (L1), Chaser_38 (L4), CicholasNage_39 (L1), Clautastrophe_39 (L3), DirkDirk_38 (L1), DrSeegs_41 (L2), DyoEdafos_40 (L4), Ellson_39 (L3), Enceladus_38 (L1), Finnry_39 (L3), Halena_38 (L1), Jubie_39 (L3), Kingsolomon_39 (L3), Krypton555_39 (L3), Lumos_39 (L3), MAckerman_38 (L1), Moostard_39 (L3), MsGreen_39 (L3), Nicholas_39 (L3), OhShagHennessy_38 (L1), Rose5_38 (L1), Silverleaf_38 (L1), Snenia_39 (L3), Tourach_41 (L2), Tyson_38 (L1), Vetrix_41 (L2), Wamburgrxpress_39 (L1), Wyatt2_39 (L1), Zaria_39 (L1),

Start 24:

- Found in 35 of 90 (38.9%) of genes in pham
- Manual Annotations of this start: 16 of 82
- Called 48.6% of time when present
- Phage (with cluster) where this start called: Aegeus_44 (L5), Archie_41 (L2), Baudelaire_44 (L5), Bazzle_41 (L2), BigCheese_41 (L2), BobsGarage_41 (L2), Crossroads_41 (L2), Finemlucis_41 (L2), Gabriela_41 (L2), Gardann_41 (L2), GuuelaD_41 (L2), Hafay_41 (L2), Itos_40 (L2), Miley16_41 (L2), Netyap_41 (L2), Wilder_41 (L2), Zakai_41 (L2),

Start 25:

- Found in 8 of 90 (8.9%) of genes in pham
- Manual Annotations of this start: 8 of 82

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Enkosi_42 (K1), KiSi_48 (K1), LeMond_48 (K1), Nibb_46 (K1), Nikao_42 (K1), Oscar_48 (K1), Scarlett_48 (K1), SgtBeansprout_39 (K1),

Start 26:

- Found in 15 of 90 (16.7%) of genes in pham
- Manual Annotations of this start: 7 of 82
- Called 53.3% of time when present
- Phage (with cluster) where this start called: AlishaPH_44 (K1), CheetoDust_43 (K1), Chris_46 (K1), Hammy_46 (K6), Jayhawk_45 (K1), LastHope_47 (K1), MarkPhew_47 (K1), TribbleTrouble_44 (K3),

Start 27:

- Found in 19 of 90 (21.1%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 10.5% of time when present
- Phage (with cluster) where this start called: Jobypre_39 (L3), Lolly9_39 (L3),

Start 29:

- Found in 12 of 90 (13.3%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Samty_39 (L3),

Start 30:

- Found in 12 of 90 (13.3%) of genes in pham
- No Manual Annotations of this start.
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Strobilo_51 (K2),

Summary by clusters:

There are 9 clusters represented in this pham: L4, K3, K2, K1, L5, L2, L3, L1, K6,

Info for manual annotations of cluster K1:

- Start number 25 was manually annotated 8 times for cluster K1.
- Start number 26 was manually annotated 5 times for cluster K1.

Info for manual annotations of cluster K3:

- Start number 26 was manually annotated 1 time for cluster K3.

Info for manual annotations of cluster K6:

- Start number 26 was manually annotated 1 time for cluster K6.

Info for manual annotations of cluster L1:

- Start number 9 was manually annotated 3 times for cluster L1.
- Start number 18 was manually annotated 15 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 13 was manually annotated 8 times for cluster L2.
- Start number 14 was manually annotated 3 times for cluster L2.

- Start number 18 was manually annotated 3 times for cluster L2.
- Start number 24 was manually annotated 14 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 8 was manually annotated 4 times for cluster L3.
- Start number 18 was manually annotated 10 times for cluster L3.
- Start number 27 was manually annotated 1 time for cluster L3.
- Start number 29 was manually annotated 1 time for cluster L3.

Info for manual annotations of cluster L4:

- Start number 13 was manually annotated 1 time for cluster L4.
- Start number 18 was manually annotated 2 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 24 was manually annotated 2 times for cluster L5.

Gene Information:

Gene: Acquire49_39 Start: 33043, Stop: 33345, Start Num: 18

Candidate Starts for Acquire49_39:

(Start: 9 @33007 has 3 MA's), (Start: 18 @33043 has 30 MA's), (31, 33178), (34, 33226), (36, 33235), (37, 33238), (38, 33256), (39, 33262), (43, 33307),

Gene: Aegeus_44 Start: 36838, Stop: 37059, Start Num: 24

Candidate Starts for Aegeus_44:

(21, 36796), (Start: 24 @36838 has 16 MA's), (Start: 26 @36850 has 7 MA's), (34, 36964), (35, 36967), (45, 37039),

Gene: AlishaPH_44 Start: 35486, Stop: 35671, Start Num: 26

Candidate Starts for AlishaPH_44:

(11, 35390), (17, 35414), (22, 35432), (Start: 26 @35486 has 7 MA's), (28, 35519), (32, 35585), (34, 35600), (40, 35648),

Gene: Appletree2_38 Start: 32985, Stop: 33272, Start Num: 18

Candidate Starts for Appletree2_38:

(Start: 9 @32949 has 3 MA's), (Start: 18 @32985 has 30 MA's), (30, 33105), (31, 33120), (33, 33162), (34, 33168), (37, 33180), (38, 33198), (39, 33204), (47, 33267),

Gene: Archie_41 Start: 34671, Stop: 34901, Start Num: 24

Candidate Starts for Archie_41:

(Start: 18 @34614 has 30 MA's), (Start: 24 @34671 has 16 MA's), (31, 34749), (33, 34791), (34, 34797), (37, 34809), (46, 34890),

Gene: AvadaKedavra_39 Start: 33052, Stop: 33354, Start Num: 18

Candidate Starts for AvadaKedavra_39:

(Start: 9 @33016 has 3 MA's), (Start: 18 @33052 has 30 MA's), (31, 33187), (34, 33235), (36, 33244), (37, 33247), (38, 33265), (39, 33271), (43, 33316),

Gene: Baudelaire_44 Start: 36838, Stop: 37059, Start Num: 24

Candidate Starts for Baudelaire_44:

(21, 36796), (Start: 24 @36838 has 16 MA's), (Start: 26 @36850 has 7 MA's), (34, 36964), (35, 36967), (45, 37039),

Gene: Bazzle_41 Start: 34703, Stop: 34933, Start Num: 24

Candidate Starts for Bazzle_41:

(Start: 18 @34646 has 30 MA's), (Start: 24 @34703 has 16 MA's), (31, 34781), (33, 34823), (34, 34829), (37, 34841), (46, 34922),

Gene: Bellis_39 Start: 34657, Stop: 34956, Start Num: 18

Candidate Starts for Bellis_39:

(Start: 18 @34657 has 30 MA's), (Start: 27 @34744 has 1 MA's), (Start: 29 @34768 has 1 MA's), (34, 34840), (37, 34852),

Gene: BigCheese_41 Start: 34467, Stop: 34697, Start Num: 24

Candidate Starts for BigCheese_41:

(Start: 13 @34392 has 9 MA's), (Start: 14 @34398 has 3 MA's), (Start: 18 @34410 has 30 MA's), (Start: 24 @34467 has 16 MA's), (33, 34587), (34, 34593), (37, 34605), (46, 34686),

Gene: BobsGarage_41 Start: 34467, Stop: 34697, Start Num: 24

Candidate Starts for BobsGarage_41:

(Start: 13 @34392 has 9 MA's), (Start: 14 @34398 has 3 MA's), (Start: 18 @34410 has 30 MA's), (Start: 24 @34467 has 16 MA's), (33, 34587), (34, 34593), (37, 34605), (46, 34686),

Gene: Breezona_41 Start: 34392, Stop: 34697, Start Num: 13

Candidate Starts for Breezona_41:

(Start: 13 @34392 has 9 MA's), (Start: 14 @34398 has 3 MA's), (Start: 18 @34410 has 30 MA's), (Start: 24 @34467 has 16 MA's), (33, 34587), (34, 34593), (37, 34605), (46, 34686),

Gene: Bromden_40 Start: 33855, Stop: 34172, Start Num: 13

Candidate Starts for Bromden_40:

(Start: 13 @33855 has 9 MA's), (15, 33861), (Start: 18 @33873 has 30 MA's), (33, 34050), (37, 34068), (44, 34140), (47, 34167),

Gene: Calm_39 Start: 33058, Stop: 33360, Start Num: 18

Candidate Starts for Calm_39:

(Start: 9 @33022 has 3 MA's), (Start: 18 @33058 has 30 MA's), (31, 33193), (34, 33241), (36, 33250), (37, 33253), (38, 33271), (39, 33277), (43, 33322),

Gene: Chaser_38 Start: 33136, Stop: 33435, Start Num: 18

Candidate Starts for Chaser_38:

(7, 33076), (Start: 8 @33097 has 4 MA's), (12, 33115), (Start: 13 @33118 has 9 MA's), (15, 33124), (Start: 18 @33136 has 30 MA's), (Start: 24 @33193 has 16 MA's), (30, 33256), (33, 33313), (37, 33331), (40, 33367),

Gene: CheetoDust_43 Start: 34700, Stop: 34885, Start Num: 26

Candidate Starts for CheetoDust_43:

(2, 34433), (5, 34550), (10, 34598), (22, 34646), (Start: 24 @34688 has 16 MA's), (Start: 26 @34700 has 7 MA's), (28, 34733), (32, 34799), (34, 34814), (40, 34862),

Gene: Chris_46 Start: 35995, Stop: 36195, Start Num: 26

Candidate Starts for Chris_46:

(22, 35941), (Start: 26 @35995 has 7 MA's), (31, 36061), (32, 36094), (34, 36109), (35, 36112), (38, 36139),

Gene: CicholasNage_39 Start: 33079, Stop: 33381, Start Num: 18

Candidate Starts for CicholasNage_39:

(Start: 9 @33043 has 3 MA's), (Start: 18 @33079 has 30 MA's), (31, 33214), (34, 33262), (36, 33271), (37, 33274), (38, 33292), (39, 33298), (43, 33343),

Gene: Clautastrophe_39 Start: 34655, Stop: 34954, Start Num: 18

Candidate Starts for Clautastrophe_39:

(Start: 18 @34655 has 30 MA's), (Start: 27 @34742 has 1 MA's), (34, 34838), (37, 34850),

Gene: Crossroads_41 Start: 34469, Stop: 34699, Start Num: 24

Candidate Starts for Crossroads_41:

(Start: 13 @34394 has 9 MA's), (Start: 14 @34400 has 3 MA's), (Start: 18 @34412 has 30 MA's), (Start: 24 @34469 has 16 MA's), (33, 34589), (34, 34595), (37, 34607), (46, 34688),

Gene: DirkDirk_38 Start: 33045, Stop: 33332, Start Num: 18

Candidate Starts for DirkDirk_38:

(Start: 9 @33009 has 3 MA's), (Start: 18 @33045 has 30 MA's), (30, 33165), (31, 33180), (33, 33222), (34, 33228), (37, 33240), (38, 33258), (39, 33264), (47, 33327),

Gene: Douge_38 Start: 33062, Stop: 33373, Start Num: 15

Candidate Starts for Douge_38:

(7, 33014), (Start: 8 @33035 has 4 MA's), (12, 33053), (Start: 13 @33056 has 9 MA's), (15, 33062), (Start: 18 @33074 has 30 MA's), (Start: 24 @33131 has 16 MA's), (33, 33251), (37, 33269), (40, 33305),

Gene: DrSeegs_41 Start: 34410, Stop: 34697, Start Num: 18

Candidate Starts for DrSeegs_41:

(Start: 13 @34392 has 9 MA's), (Start: 14 @34398 has 3 MA's), (Start: 18 @34410 has 30 MA's), (Start: 24 @34467 has 16 MA's), (33, 34587), (34, 34593), (37, 34605), (46, 34686),

Gene: DuncansLeg_39 Start: 34634, Stop: 34972, Start Num: 8

Candidate Starts for DuncansLeg_39:

(Start: 8 @34634 has 4 MA's), (Start: 18 @34673 has 30 MA's), (Start: 27 @34760 has 1 MA's), (Start: 29 @34784 has 1 MA's), (34, 34856), (37, 34868), (38, 34886),

Gene: DyoEdafos_40 Start: 33408, Stop: 33707, Start Num: 18

Candidate Starts for DyoEdafos_40:

(7, 33348), (Start: 8 @33369 has 4 MA's), (12, 33387), (Start: 13 @33390 has 9 MA's), (15, 33396), (Start: 18 @33408 has 30 MA's), (33, 33585), (37, 33603),

Gene: Ellson_39 Start: 34649, Stop: 34948, Start Num: 18

Candidate Starts for Ellson_39:

(Start: 8 @34610 has 4 MA's), (Start: 18 @34649 has 30 MA's), (Start: 27 @34736 has 1 MA's), (Start: 29 @34760 has 1 MA's), (34, 34832), (37, 34844), (38, 34862),

Gene: Enceladus_38 Start: 33028, Stop: 33315, Start Num: 18

Candidate Starts for Enceladus_38:

(Start: 9 @32992 has 3 MA's), (Start: 18 @33028 has 30 MA's), (30, 33148), (31, 33163), (33, 33205), (34, 33211), (37, 33223), (38, 33241), (39, 33247), (47, 33310),

Gene: Enkosi_42 Start: 37403, Stop: 37597, Start Num: 25

Candidate Starts for Enkosi_42:

(22, 37352), (Start: 25 @37403 has 8 MA's), (28, 37439), (34, 37520), (38, 37550), (39, 37556),

Gene: Faith1_41 Start: 34392, Stop: 34697, Start Num: 13

Candidate Starts for Faith1_41:

(Start: 13 @34392 has 9 MA's), (Start: 14 @34398 has 3 MA's), (Start: 18 @34410 has 30 MA's),
(Start: 24 @34467 has 16 MA's), (33, 34587), (34, 34593), (37, 34605), (46, 34686),

Gene: Finemlucis_41 Start: 34743, Stop: 34973, Start Num: 24

Candidate Starts for Finemlucis_41:

(Start: 13 @34668 has 9 MA's), (Start: 14 @34674 has 3 MA's), (Start: 18 @34686 has 30 MA's),
(Start: 24 @34743 has 16 MA's), (33, 34863), (34, 34869), (37, 34881), (46, 34962),

Gene: Finnry_39 Start: 34658, Stop: 34957, Start Num: 18

Candidate Starts for Finnry_39:

(Start: 18 @34658 has 30 MA's), (Start: 27 @34745 has 1 MA's), (Start: 29 @34769 has 1 MA's), (34,
34841), (37, 34853),

Gene: Gabriela_41 Start: 34729, Stop: 34959, Start Num: 24

Candidate Starts for Gabriela_41:

(Start: 13 @34654 has 9 MA's), (Start: 14 @34660 has 3 MA's), (Start: 18 @34672 has 30 MA's),
(Start: 24 @34729 has 16 MA's), (33, 34849), (34, 34855), (37, 34867), (46, 34948),

Gene: Gardann_41 Start: 34468, Stop: 34698, Start Num: 24

Candidate Starts for Gardann_41:

(Start: 13 @34393 has 9 MA's), (Start: 14 @34399 has 3 MA's), (Start: 18 @34411 has 30 MA's),
(Start: 24 @34468 has 16 MA's), (33, 34588), (34, 34594), (37, 34606), (46, 34687),

Gene: GuuelaD_41 Start: 34506, Stop: 34736, Start Num: 24

Candidate Starts for GuuelaD_41:

(Start: 13 @34431 has 9 MA's), (Start: 14 @34437 has 3 MA's), (Start: 18 @34449 has 30 MA's),
(Start: 24 @34506 has 16 MA's), (33, 34626), (34, 34632), (37, 34644), (46, 34725),

Gene: Hafay_41 Start: 34501, Stop: 34731, Start Num: 24

Candidate Starts for Hafay_41:

(Start: 13 @34426 has 9 MA's), (Start: 14 @34432 has 3 MA's), (Start: 18 @34444 has 30 MA's),
(Start: 24 @34501 has 16 MA's), (33, 34621), (34, 34627), (37, 34639), (42, 34693), (46, 34720),

Gene: Halena_38 Start: 33054, Stop: 33356, Start Num: 18

Candidate Starts for Halena_38:

(Start: 9 @33018 has 3 MA's), (Start: 18 @33054 has 30 MA's), (31, 33189), (34, 33237), (36, 33246),
(37, 33249), (38, 33267), (39, 33273), (43, 33318),

Gene: Hammy_46 Start: 36187, Stop: 36366, Start Num: 26

Candidate Starts for Hammy_46:

(22, 36133), (Start: 26 @36187 has 7 MA's), (34, 36301), (38, 36331),

Gene: Itos_40 Start: 33373, Stop: 33603, Start Num: 24

Candidate Starts for Itos_40:

(Start: 13 @33298 has 9 MA's), (Start: 14 @33304 has 3 MA's), (Start: 18 @33316 has 30 MA's),
(Start: 24 @33373 has 16 MA's), (33, 33493), (34, 33499), (37, 33511), (46, 33592),

Gene: Jayhawk_45 Start: 35214, Stop: 35399, Start Num: 26

Candidate Starts for Jayhawk_45:

(11, 35118), (16, 35139), (17, 35142), (22, 35160), (23, 35181), (Start: 24 @35202 has 16 MA's),
(Start: 26 @35214 has 7 MA's), (28, 35247), (32, 35313), (34, 35328), (40, 35376),

Gene: Jobypre_39 Start: 34742, Stop: 34954, Start Num: 27

Candidate Starts for Jobypre_39:

(Start: 18 @34655 has 30 MA's), (Start: 27 @34742 has 1 MA's), (34, 34838), (37, 34850),

Gene: JoeDirt_38 Start: 32990, Stop: 33313, Start Num: 9

Candidate Starts for JoeDirt_38:

(Start: 9 @32990 has 3 MA's), (Start: 18 @33026 has 30 MA's), (30, 33146), (31, 33161), (33, 33203),
(34, 33209), (37, 33221), (38, 33239), (39, 33245), (47, 33308),

Gene: Jubie_39 Start: 34656, Stop: 34955, Start Num: 18

Candidate Starts for Jubie_39:

(Start: 18 @34656 has 30 MA's), (Start: 27 @34743 has 1 MA's), (34, 34839), (37, 34851),

Gene: Kahlid_41 Start: 34398, Stop: 34703, Start Num: 13

Candidate Starts for Kahlid_41:

(Start: 13 @34398 has 9 MA's), (Start: 14 @34404 has 3 MA's), (Start: 18 @34416 has 30 MA's),
(Start: 24 @34473 has 16 MA's), (33, 34593), (34, 34599), (37, 34611), (42, 34665), (46, 34692),

Gene: KiSi_48 Start: 36394, Stop: 36600, Start Num: 25

Candidate Starts for KiSi_48:

(1, 36079), (3, 36205), (4, 36235), (22, 36343), (Start: 25 @36394 has 8 MA's), (Start: 26 @36397 has
7 MA's), (30, 36448), (31, 36463), (34, 36511),

Gene: Kingsolomon_39 Start: 34655, Stop: 34954, Start Num: 18

Candidate Starts for Kingsolomon_39:

(Start: 18 @34655 has 30 MA's), (Start: 27 @34742 has 1 MA's), (34, 34838), (37, 34850),

Gene: Krypton555_39 Start: 34572, Stop: 34871, Start Num: 18

Candidate Starts for Krypton555_39:

(Start: 8 @34533 has 4 MA's), (Start: 18 @34572 has 30 MA's), (Start: 27 @34659 has 1 MA's), (Start:
29 @34683 has 1 MA's), (34, 34755), (37, 34767), (43, 34836),

Gene: LastHope_47 Start: 34715, Stop: 34948, Start Num: 26

Candidate Starts for LastHope_47:

(22, 34661), (Start: 26 @34715 has 7 MA's), (30, 34766),

Gene: LeBron_39 Start: 33034, Stop: 33357, Start Num: 9

Candidate Starts for LeBron_39:

(Start: 9 @33034 has 3 MA's), (Start: 18 @33070 has 30 MA's), (30, 33190), (31, 33205), (33, 33247),
(34, 33253), (37, 33265), (38, 33283), (39, 33289), (47, 33352),

Gene: LeMond_48 Start: 36378, Stop: 36584, Start Num: 25

Candidate Starts for LeMond_48:

(22, 36327), (Start: 25 @36378 has 8 MA's), (Start: 26 @36381 has 7 MA's), (31, 36447), (34, 36495),
(37, 36507),

Gene: Lewan_41 Start: 34391, Stop: 34690, Start Num: 14

Candidate Starts for Lewan_41:

(Start: 14 @34391 has 3 MA's), (Start: 18 @34403 has 30 MA's), (Start: 24 @34460 has 16 MA's),
(33, 34580), (34, 34586), (37, 34598), (46, 34679),

Gene: LilDestine_41 Start: 34396, Stop: 34695, Start Num: 14

Candidate Starts for LilDestine_41:

(Start: 13 @34390 has 9 MA's), (Start: 14 @34396 has 3 MA's), (Start: 18 @34408 has 30 MA's),
(Start: 24 @34465 has 16 MA's), (33, 34585), (34, 34591), (37, 34603), (46, 34684),

Gene: Loadrie_41 Start: 34424, Stop: 34729, Start Num: 13

Candidate Starts for Loadrie_41:

(Start: 13 @34424 has 9 MA's), (Start: 14 @34430 has 3 MA's), (Start: 18 @34442 has 30 MA's),
(Start: 24 @34499 has 16 MA's), (33, 34619), (34, 34625), (37, 34637), (42, 34691), (46, 34718),

Gene: Lolly9_39 Start: 34550, Stop: 34762, Start Num: 27

Candidate Starts for Lolly9_39:

(Start: 8 @34424 has 4 MA's), (Start: 18 @34463 has 30 MA's), (Start: 27 @34550 has 1 MA's), (Start:
29 @34574 has 1 MA's), (34, 34646), (37, 34658), (38, 34676),

Gene: Lumos_39 Start: 34652, Stop: 34951, Start Num: 18

Candidate Starts for Lumos_39:

(Start: 18 @34652 has 30 MA's), (Start: 27 @34739 has 1 MA's), (34, 34835), (37, 34847),

Gene: MAckerman_38 Start: 33048, Stop: 33350, Start Num: 18

Candidate Starts for MAckerman_38:

(Start: 9 @33012 has 3 MA's), (Start: 18 @33048 has 30 MA's), (31, 33183), (34, 33231), (36, 33240),
(37, 33243), (38, 33261), (39, 33267), (43, 33312),

Gene: MarkPhew_47 Start: 35823, Stop: 36026, Start Num: 26

Candidate Starts for MarkPhew_47:

(22, 35769), (Start: 26 @35823 has 7 MA's), (Start: 29 @35865 has 1 MA's), (34, 35937), (35, 35940),
(38, 35967), (41, 35991),

Gene: Miley16_41 Start: 34467, Stop: 34697, Start Num: 24

Candidate Starts for Miley16_41:

(Start: 13 @34392 has 9 MA's), (Start: 14 @34398 has 3 MA's), (Start: 18 @34410 has 30 MA's),
(Start: 24 @34467 has 16 MA's), (33, 34587), (34, 34593), (37, 34605), (46, 34686),

Gene: MiniLon_39 Start: 34425, Stop: 34763, Start Num: 8

Candidate Starts for MiniLon_39:

(Start: 8 @34425 has 4 MA's), (Start: 18 @34464 has 30 MA's), (Start: 27 @34551 has 1 MA's), (Start:
29 @34575 has 1 MA's), (34, 34647), (37, 34659), (38, 34677),

Gene: MiniMac_39 Start: 34422, Stop: 34760, Start Num: 8

Candidate Starts for MiniMac_39:

(6, 34392), (Start: 8 @34422 has 4 MA's), (Start: 18 @34461 has 30 MA's), (Start: 27 @34548 has 1
MA's), (Start: 29 @34572 has 1 MA's), (34, 34644), (37, 34656), (38, 34674),

Gene: MkaliMitinis3_41 Start: 34400, Stop: 34699, Start Num: 14

Candidate Starts for MkaliMitinis3_41:

(Start: 13 @34394 has 9 MA's), (Start: 14 @34400 has 3 MA's), (Start: 18 @34412 has 30 MA's),
(Start: 24 @34469 has 16 MA's), (33, 34589), (34, 34595), (37, 34607), (46, 34688),

Gene: Moostard_39 Start: 34657, Stop: 34956, Start Num: 18

Candidate Starts for Moostard_39:

(Start: 18 @34657 has 30 MA's), (Start: 27 @34744 has 1 MA's), (Start: 29 @34768 has 1 MA's), (34, 34840), (37, 34852),

Gene: MsGreen_39 Start: 34655, Stop: 34954, Start Num: 18

Candidate Starts for MsGreen_39:

(Start: 18 @34655 has 30 MA's), (Start: 27 @34742 has 1 MA's), (34, 34838), (37, 34850),

Gene: Netyap_41 Start: 34467, Stop: 34697, Start Num: 24

Candidate Starts for Netyap_41:

(Start: 13 @34392 has 9 MA's), (Start: 14 @34398 has 3 MA's), (Start: 18 @34410 has 30 MA's), (Start: 24 @34467 has 16 MA's), (33, 34587), (34, 34593), (37, 34605), (46, 34686),

Gene: Nibb_46 Start: 35544, Stop: 35738, Start Num: 25

Candidate Starts for Nibb_46:

(22, 35493), (Start: 25 @35544 has 8 MA's), (Start: 26 @35547 has 7 MA's), (31, 35613), (34, 35661),

Gene: Nicholas_39 Start: 34655, Stop: 34954, Start Num: 18

Candidate Starts for Nicholas_39:

(Start: 18 @34655 has 30 MA's), (Start: 27 @34742 has 1 MA's), (34, 34838), (37, 34850),

Gene: Nicholasp3_41 Start: 34393, Stop: 34698, Start Num: 13

Candidate Starts for Nicholasp3_41:

(Start: 13 @34393 has 9 MA's), (Start: 14 @34399 has 3 MA's), (Start: 18 @34411 has 30 MA's), (Start: 24 @34468 has 16 MA's), (33, 34588), (34, 34594), (37, 34606), (46, 34687),

Gene: Nikao_42 Start: 37403, Stop: 37597, Start Num: 25

Candidate Starts for Nikao_42:

(22, 37352), (Start: 25 @37403 has 8 MA's), (28, 37439), (34, 37520), (38, 37550), (39, 37556),

Gene: OhShagHennessy_38 Start: 33016, Stop: 33303, Start Num: 18

Candidate Starts for OhShagHennessy_38:

(Start: 9 @32980 has 3 MA's), (Start: 18 @33016 has 30 MA's), (30, 33136), (31, 33151), (33, 33193), (34, 33199), (37, 33211), (38, 33229), (39, 33235), (47, 33298),

Gene: Oscar_48 Start: 36280, Stop: 36486, Start Num: 25

Candidate Starts for Oscar_48:

(22, 36229), (Start: 25 @36280 has 8 MA's), (Start: 26 @36283 has 7 MA's), (34, 36397), (37, 36409),

Gene: Rose5_38 Start: 33043, Stop: 33345, Start Num: 18

Candidate Starts for Rose5_38:

(Start: 9 @33007 has 3 MA's), (Start: 18 @33043 has 30 MA's), (31, 33178), (34, 33226), (36, 33235), (37, 33238), (38, 33256), (39, 33262), (43, 33307),

Gene: Rumpelstiltskin_41 Start: 34659, Stop: 34964, Start Num: 13

Candidate Starts for Rumpelstiltskin_41:

(Start: 13 @34659 has 9 MA's), (Start: 14 @34665 has 3 MA's), (Start: 18 @34677 has 30 MA's), (Start: 24 @34734 has 16 MA's), (33, 34854), (34, 34860), (37, 34872), (46, 34953),

Gene: Samty_39 Start: 34767, Stop: 34955, Start Num: 29

Candidate Starts for Samty_39:

(Start: 18 @34656 has 30 MA's), (Start: 27 @34743 has 1 MA's), (Start: 29 @34767 has 1 MA's), (34, 34839), (37, 34851),

Gene: Scarlett_48 Start: 36272, Stop: 36478, Start Num: 25

Candidate Starts for Scarlett_48:

(22, 36221), (Start: 25 @36272 has 8 MA's), (Start: 26 @36275 has 7 MA's), (31, 36341), (34, 36389), (37, 36401),

Gene: SgtBeansprout_39 Start: 34790, Stop: 34984, Start Num: 25

Candidate Starts for SgtBeansprout_39:

(22, 34739), (Start: 25 @34790 has 8 MA's), (28, 34826), (34, 34907), (38, 34937), (39, 34943),

Gene: Silverleaf_38 Start: 33043, Stop: 33345, Start Num: 18

Candidate Starts for Silverleaf_38:

(Start: 9 @33007 has 3 MA's), (Start: 18 @33043 has 30 MA's), (31, 33178), (34, 33226), (36, 33235), (37, 33238), (38, 33256), (39, 33262), (43, 33307),

Gene: Snenia_39 Start: 34656, Stop: 34955, Start Num: 18

Candidate Starts for Snenia_39:

(Start: 18 @34656 has 30 MA's), (Start: 27 @34743 has 1 MA's), (34, 34839), (37, 34851),

Gene: Strobilo_51 Start: 37314, Stop: 37517, Start Num: 30

Candidate Starts for Strobilo_51:

(19, 37197), (20, 37200), (22, 37209), (30, 37314), (34, 37377), (38, 37407), (46, 37485), (48, 37500), (49, 37506),

Gene: Tourach_41 Start: 34425, Stop: 34712, Start Num: 18

Candidate Starts for Tourach_41:

(7, 34365), (Start: 18 @34425 has 30 MA's), (Start: 24 @34482 has 16 MA's), (31, 34560), (33, 34602), (34, 34608), (37, 34620),

Gene: TribbleTrouble_44 Start: 35315, Stop: 35500, Start Num: 26

Candidate Starts for TribbleTrouble_44:

(22, 35261), (Start: 26 @35315 has 7 MA's), (31, 35381),

Gene: Tyson_38 Start: 33044, Stop: 33346, Start Num: 18

Candidate Starts for Tyson_38:

(Start: 9 @33008 has 3 MA's), (Start: 18 @33044 has 30 MA's), (31, 33179), (34, 33227), (36, 33236), (37, 33239), (38, 33257), (39, 33263), (43, 33308),

Gene: UPIE_39 Start: 33006, Stop: 33329, Start Num: 9

Candidate Starts for UPIE_39:

(Start: 9 @33006 has 3 MA's), (Start: 18 @33042 has 30 MA's), (30, 33162), (31, 33177), (33, 33219), (34, 33225), (37, 33237), (38, 33255), (39, 33261), (47, 33324),

Gene: Vetrix_41 Start: 34417, Stop: 34704, Start Num: 18

Candidate Starts for Vetrix_41:

(Start: 13 @34399 has 9 MA's), (Start: 14 @34405 has 3 MA's), (Start: 18 @34417 has 30 MA's), (Start: 24 @34474 has 16 MA's), (33, 34594), (34, 34600), (37, 34612), (46, 34693),

Gene: Wamburgrxpress_39 Start: 33057, Stop: 33344, Start Num: 18

Candidate Starts for Wamburgrxpress_39:

(Start: 9 @33021 has 3 MA's), (Start: 18 @33057 has 30 MA's), (30, 33177), (31, 33192), (33, 33234), (34, 33240), (37, 33252), (38, 33270), (39, 33276), (47, 33339),

Gene: Whirlwind_40 Start: 34375, Stop: 34713, Start Num: 8

Candidate Starts for Whirlwind_40:

(Start: 8 @34375 has 4 MA's), (Start: 18 @34414 has 30 MA's), (Start: 27 @34501 has 1 MA's), (Start: 29 @34525 has 1 MA's), (34, 34597), (37, 34609), (43, 34678),

Gene: Wigglewiggles_41 Start: 34425, Stop: 34730, Start Num: 13

Candidate Starts for Wigglewiggles_41:

(Start: 13 @34425 has 9 MA's), (Start: 14 @34431 has 3 MA's), (Start: 18 @34443 has 30 MA's), (Start: 24 @34500 has 16 MA's), (33, 34620), (34, 34626), (37, 34638), (42, 34692), (46, 34719),

Gene: Wilder_41 Start: 34473, Stop: 34703, Start Num: 24

Candidate Starts for Wilder_41:

(Start: 13 @34398 has 9 MA's), (Start: 14 @34404 has 3 MA's), (Start: 18 @34416 has 30 MA's), (Start: 24 @34473 has 16 MA's), (33, 34593), (34, 34599), (37, 34611), (42, 34665), (46, 34692),

Gene: Winky_41 Start: 34392, Stop: 34697, Start Num: 13

Candidate Starts for Winky_41:

(Start: 13 @34392 has 9 MA's), (Start: 14 @34398 has 3 MA's), (Start: 18 @34410 has 30 MA's), (Start: 24 @34467 has 16 MA's), (33, 34587), (34, 34593), (37, 34605), (46, 34686),

Gene: Wyatt2_39 Start: 33043, Stop: 33345, Start Num: 18

Candidate Starts for Wyatt2_39:

(Start: 9 @33007 has 3 MA's), (Start: 18 @33043 has 30 MA's), (31, 33178), (34, 33226), (36, 33235), (37, 33238), (38, 33256), (39, 33262), (43, 33307),

Gene: Zakai_41 Start: 34725, Stop: 34955, Start Num: 24

Candidate Starts for Zakai_41:

(Start: 13 @34650 has 9 MA's), (Start: 14 @34656 has 3 MA's), (Start: 18 @34668 has 30 MA's), (Start: 24 @34725 has 16 MA's), (33, 34845), (34, 34851), (37, 34863), (46, 34944),

Gene: Zaria_39 Start: 33058, Stop: 33360, Start Num: 18

Candidate Starts for Zaria_39:

(Start: 9 @33022 has 3 MA's), (Start: 18 @33058 has 30 MA's), (31, 33193), (34, 33241), (36, 33250), (37, 33253), (38, 33271), (39, 33277), (43, 33322),