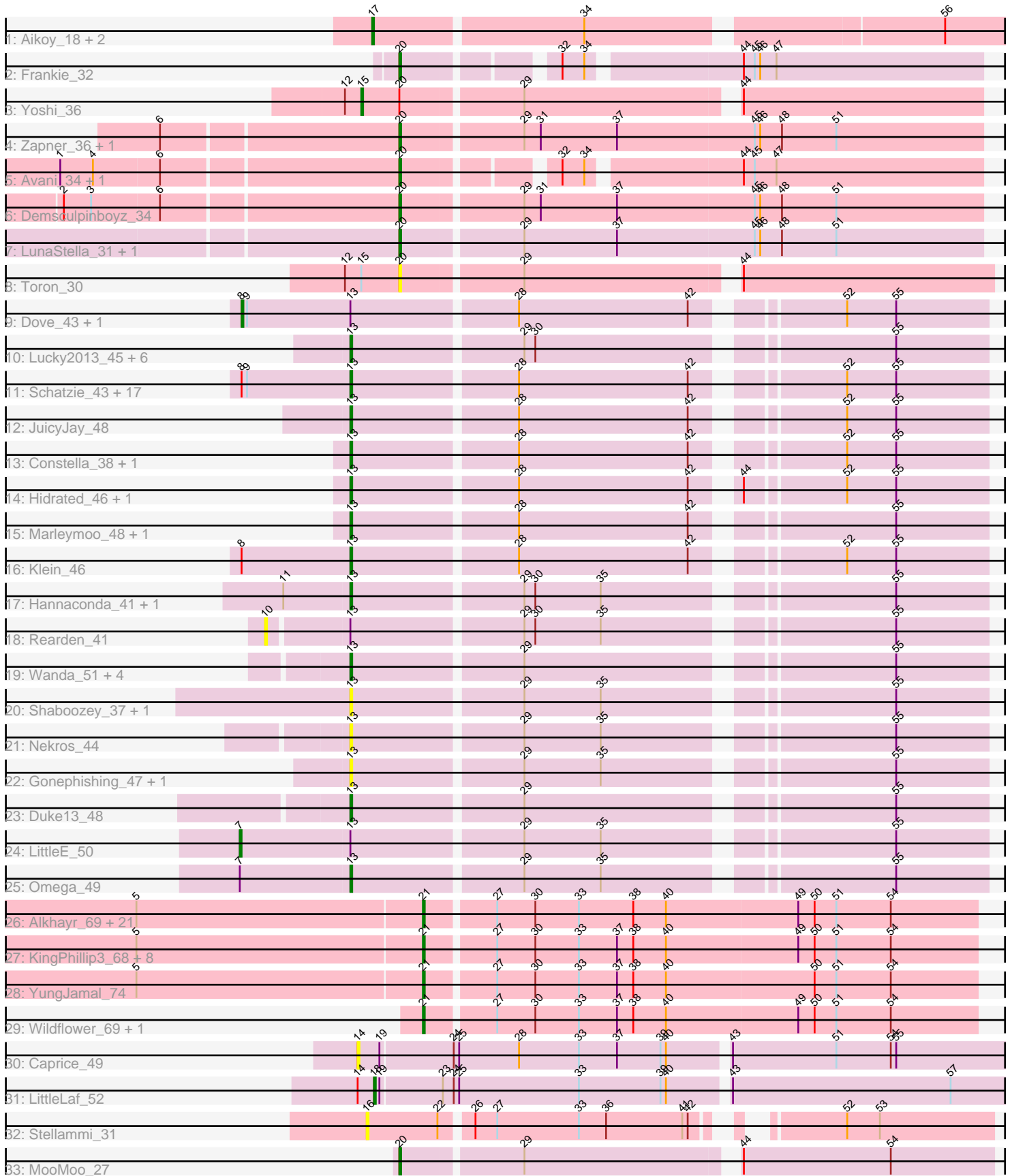


Pham 296423



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 296423 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296423 has 102 members, 18 are drafts.

Phages represented in each track:

- Track 1 : Aikoy_18, Onyinye_19, Leopard_18
- Track 2 : Frankie_32
- Track 3 : Yoshi_36
- Track 4 : Zapner_36, Jabbawokkie_37
- Track 5 : Avani_34, Che9d_34
- Track 6 : Demsculpinboyz_34
- Track 7 : LunaStella_31, TChen_29
- Track 8 : Toron_30
- Track 9 : Dove_43, Redno2_44
- Track 10 : Lucky2013_45, Courthouse_45, Porcelain_44, Superphikiman_45, MiaZeal_45, Ariel_45, Squint_44
- Track 11 : Schatzie_43, Hughesyang_44, Odette_46, Halley_46, HokkenD_39, NihilNomen_45, Bagrid_45, Kalah2_46, Yeet_44, Beem_46, Dallas_48, Zelink_47, Phoebus_45, Bombitas_42, EricMillard_46, Ejimix_46, Pound_47, ThreeRngTarjay_44
- Track 12 : JuicyJay_48
- Track 13 : Constella_38, Xiaokay_41
- Track 14 : Hidrated_46, Bobby_45
- Track 15 : Marleymoo_48, Thibault_40
- Track 16 : Klein_46
- Track 17 : Hannaconda_41, KashFlow_38
- Track 18 : Rearden_41
- Track 19 : Wanda_51, Optimus_50, BAKA_49, DmpstrDiver_46, Minerva_51
- Track 20 : Shaboozey_37, BronnyJames_37
- Track 21 : Nekros_44
- Track 22 : Gonephishing_47, Nibley_40
- Track 23 : Duke13_48
- Track 24 : LittleE_50
- Track 25 : Omega_49
- Track 26 : Alkhayr_69, Zakhe101_68, Imara_67, Idergollasper_69, SchoolBus_69, Vagabond_69, TelAviv_66, Dylan_69, Blessica_70, Schuy_70, Winget_70, Shida_69, Ryadel_73, Krili_68, YoyoKar_67, FoulBall_69, Bora_67, Catdawg_69, Murai_70, Zebo_69, NiebruSaylor_68, Familton_70
- Track 27 : KingPhillip3_68, Firecracker_71, Smooch_72, Wogge42_68, JangDynasty_69, Vorrrps_69, Corndog_72, MadKillah_70, Mori_69
- Track 28 : YungJamal_74
- Track 29 : Wildflower_69, Ashwin_71

- Track 30 : Caprice_49
- Track 31 : LittleLaf_52
- Track 32 : Stellammi_31
- Track 33 : MooMoo_27

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

The start number called the most often in the published annotations is 13, it was called in 37 of the 84 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ariel_45, BAKA_49, Bagrid_45, Beem_46, Bobby_45, Bombitas_42, BronnyJames_37, Constella_38, Courthouse_45, Dallas_48, DmpstrDiver_46, Duke13_48, Ejimix_46, EricMillard_46, Gonephishing_47, Halley_46, Hannaconda_41, Hidrated_46, HokkenD_39, Hughesyang_44, JuicyJay_48, Kalah2_46, KashFlow_38, Klein_46, Lucky2013_45, Marleymoo_48, MiaZeal_45, Minerva_51, Nekros_44, Nibley_40, NihilNomen_45, Odette_46, Omega_49, Optimus_50, Phoebus_45, Porcelain_44, Pound_47, Schatzie_43, Shaboozey_37, Squint_44, Superphikiman_45, Thibault_40, ThreeRngTarjay_44, Wanda_51, Xiaokay_41, Yeet_44, Zelink_47,

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

- Dove_43, LittleE_50, Rearden_41, Redno2_44,

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

- Aikoy_18, Alkhayr_69, Ashwin_71, Avani_34, Blessica_70, Bora_67, Caprice_49, Catdawg_69, Che9d_34, Corndog_72, Demsculpinboyz_34, Dylan_69, Familton_70, Firecracker_71, FoulBall_69, Frankie_32, Idergollasper_69, Imara_67, Jabbawokkie_37, JangDynasty_69, KingPhillip3_68, Krili_68, Leopard_18, LittleLaf_52, LunaStella_31, MadKillah_70, MooMoo_27, Mori_69, Murai_70, NiebruSaylor_68, Onyinye_19, Ryadel_73, SchoolBus_69, Schuy_70, Shida_69, Smooch_72, Stellammi_31, TChen_29, TelAviv_66, Toron_30, Vagabond_69, Vorrrps_69, Wildflower_69, Winget_70, Wogge42_68, Yoshi_36, YoyoKar_67, YungJamal_74, Zakhe101_68, Zapner_36, Zebo_69,

Summary by start number:

Start 7:

- Found in 2 of 102 (2.0%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 50.0% of time when present
- Phage (with cluster) where this start called: LittleE_50 (J),

Start 8:

- Found in 21 of 102 (20.6%) of genes in pham
- Manual Annotations of this start: 2 of 84
- Called 9.5% of time when present
- Phage (with cluster) where this start called: Dove_43 (J), Redno2_44 (J),

Start 10:

- Found in 1 of 102 (1.0%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rearden_41 (J),

Start 13:

- Found in 51 of 102 (50.0%) of genes in pham
- Manual Annotations of this start: 37 of 84
- Called 92.2% of time when present
- Phage (with cluster) where this start called: Ariel_45 (J), BAKA_49 (J), Bagrid_45 (J), Beem_46 (J), Bobby_45 (J), Bombitas_42 (J), BronnyJames_37 (J), Constella_38 (J), Courthouse_45 (J), Dallas_48 (J), DmpstrDiver_46 (J), Duke13_48 (J), Ejimix_46 (J), EricMillard_46 (J), Gonephishing_47 (J), Halley_46 (J), Hannaconda_41 (J), Hidrated_46 (J), HokkenD_39 (J), Hughesyang_44 (J), JuicyJay_48 (J), Kalah2_46 (J), KashFlow_38 (J), Klein_46 (J), Lucky2013_45 (J), Marleymoo_48 (J), MiaZeal_45 (J), Minerva_51 (J), Nekros_44 (J), Nibley_40 (J), NihilNomen_45 (J), Odette_46 (J), Omega_49 (J), Optimus_50 (J), Phoebus_45 (J), Porcelain_44 (J), Pound_47 (J), Schatzie_43 (J), Shaboozey_37 (J), Squint_44 (J), Superphikiman_45 (J), Thibault_40 (J), ThreeRngTarjay_44 (J), Wanda_51 (J), Xiaokay_41 (J), Yeet_44 (J), Zelink_47 (J),

Start 14:

- Found in 2 of 102 (2.0%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Caprice_49 (S),

Start 15:

- Found in 2 of 102 (2.0%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Yoshi_36 (F2),

Start 16:

- Found in 1 of 102 (1.0%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Stellammi_31 (UNK),

Start 17:

- Found in 3 of 102 (2.9%) of genes in pham
- Manual Annotations of this start: 3 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aikoy_18 (AE), Leopard_18 (AE), Onyinye_19 (AE),

Start 18:

- Found in 1 of 102 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LittleLaf_52 (S),

Start 20:

- Found in 11 of 102 (10.8%) of genes in pham
- Manual Annotations of this start: 9 of 84
- Called 90.9% of time when present
- Phage (with cluster) where this start called: Avani_34 (F2), Che9d_34 (F2), Demsculpinboyz_34 (F2), Frankie_32 (F1), Jabbawokkie_37 (F2), LunaStella_31 (F4), MooMoo_27 (singleton), TChen_29 (F4), Toron_30 (F6), Zapner_36 (F2),

Start 21:

- Found in 34 of 102 (33.3%) of genes in pham
- Manual Annotations of this start: 30 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alkhayr_69 (O), Ashwin_71 (O), Blessica_70 (O), Bora_67 (O), Catdawg_69 (O), Corndog_72 (O), Dylan_69 (O), Familton_70 (O), Firecracker_71 (O), FoulBall_69 (O), Idergollasper_69 (O), Imara_67 (O), JangDynasty_69 (O), KingPhillip3_68 (O), Krili_68 (O), MadKillah_70 (O), Mori_69 (O), Murai_70 (O), NiebruSaylor_68 (O), Ryadel_73 (O), SchoolBus_69 (O), Schuy_70 (O), Shida_69 (O), Smooch_72 (O), TelAviv_66 (O), Vagabond_69 (O), Vorrps_69 (O), Wildflower_69 (O), Winget_70 (O), Wogge42_68 (O), YoyoKar_67 (O), YungJamal_74 (O), Zakhe101_68 (O), Zebo_69 (O),

Summary by clusters:

There are 10 clusters represented in this pham: F1, F2, F4, F6, J, singleton, O, S, AE, UNK,

Info for manual annotations of cluster AE:

- Start number 17 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster F1:

- Start number 20 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 15 was manually annotated 1 time for cluster F2.
- Start number 20 was manually annotated 5 times for cluster F2.

Info for manual annotations of cluster F4:

- Start number 20 was manually annotated 2 times for cluster F4.

Info for manual annotations of cluster J:

- Start number 7 was manually annotated 1 time for cluster J.
- Start number 8 was manually annotated 2 times for cluster J.
- Start number 13 was manually annotated 37 times for cluster J.

Info for manual annotations of cluster O:

- Start number 21 was manually annotated 30 times for cluster O.

Info for manual annotations of cluster S:

- Start number 18 was manually annotated 1 time for cluster S.

Gene Information:

Gene: Aikoy_18 Start: 11557, Stop: 11889, Start Num: 17

Candidate Starts for Aikoy_18:

(Start: 17 @11557 has 3 MA's), (34, 11668), (56, 11851),

Gene: Alkhayr_69 Start: 44479, Stop: 44778, Start Num: 21

Candidate Starts for Alkhayr_69:

(5, 44323), (Start: 21 @44479 has 30 MA's), (27, 44515), (30, 44536), (33, 44560), (38, 44590), (40, 44608), (49, 44680), (50, 44689), (51, 44701), (54, 44731),

Gene: Ariel_45 Start: 36301, Stop: 36627, Start Num: 13

Candidate Starts for Ariel_45:

(Start: 13 @36301 has 37 MA's), (29, 36391), (30, 36397), (55, 36577),

Gene: Ashwin_71 Start: 45249, Stop: 45548, Start Num: 21

Candidate Starts for Ashwin_71:

(Start: 21 @45249 has 30 MA's), (27, 45285), (30, 45306), (33, 45330), (37, 45351), (38, 45360), (40, 45378), (49, 45450), (50, 45459), (51, 45471), (54, 45501),

Gene: Avani_34 Start: 25152, Stop: 25445, Start Num: 20

Candidate Starts for Avani_34:

(1, 24972), (4, 24990), (6, 25026), (Start: 20 @25152 has 9 MA's), (32, 25224), (34, 25236), (44, 25314), (45, 25320), (47, 25332),

Gene: BAKA_49 Start: 39959, Stop: 40285, Start Num: 13

Candidate Starts for BAKA_49:

(Start: 13 @39959 has 37 MA's), (29, 40049), (55, 40235),

Gene: Bagrid_45 Start: 39888, Stop: 40214, Start Num: 13

Candidate Starts for Bagrid_45:

(Start: 8 @39828 has 2 MA's), (9, 39831), (Start: 13 @39888 has 37 MA's), (28, 39975), (42, 40068), (52, 40137), (55, 40164),

Gene: Beem_46 Start: 40454, Stop: 40780, Start Num: 13

Candidate Starts for Beem_46:

(Start: 8 @40394 has 2 MA's), (9, 40397), (Start: 13 @40454 has 37 MA's), (28, 40541), (42, 40634), (52, 40703), (55, 40730),

Gene: Blessica_70 Start: 45078, Stop: 45377, Start Num: 21

Candidate Starts for Blessica_70:

(5, 44922), (Start: 21 @45078 has 30 MA's), (27, 45114), (30, 45135), (33, 45159), (38, 45189), (40, 45207), (49, 45279), (50, 45288), (51, 45300), (54, 45330),

Gene: Bobby_45 Start: 38639, Stop: 38965, Start Num: 13

Candidate Starts for Bobby_45:

(Start: 13 @38639 has 37 MA's), (28, 38726), (42, 38819), (44, 38837), (52, 38888), (55, 38915),

Gene: Bombitas_42 Start: 39510, Stop: 39836, Start Num: 13

Candidate Starts for Bombitas_42:

(Start: 8 @39450 has 2 MA's), (9, 39453), (Start: 13 @39510 has 37 MA's), (28, 39597), (42, 39690), (52, 39759), (55, 39786),

Gene: Bora_67 Start: 44459, Stop: 44758, Start Num: 21

Candidate Starts for Bora_67:

(5, 44303), (Start: 21 @44459 has 30 MA's), (27, 44495), (30, 44516), (33, 44540), (38, 44570), (40, 44588), (49, 44660), (50, 44669), (51, 44681), (54, 44711),

Gene: BronnyJames_37 Start: 33633, Stop: 33959, Start Num: 13

Candidate Starts for BronnyJames_37:

(Start: 13 @33633 has 37 MA's), (29, 33723), (35, 33765), (55, 33909),

Gene: Caprice_49 Start: 29287, Stop: 29634, Start Num: 14

Candidate Starts for Caprice_49:

(14, 29287), (19, 29299), (24, 29338), (25, 29341), (28, 29374), (33, 29407), (37, 29428), (39, 29452), (40, 29455), (43, 29485), (51, 29542), (54, 29572), (55, 29575),

Gene: Catdawg_69 Start: 44814, Stop: 45113, Start Num: 21

Candidate Starts for Catdawg_69:

(5, 44658), (Start: 21 @44814 has 30 MA's), (27, 44850), (30, 44871), (33, 44895), (38, 44925), (40, 44943), (49, 45015), (50, 45024), (51, 45036), (54, 45066),

Gene: Che9d_34 Start: 25160, Stop: 25453, Start Num: 20

Candidate Starts for Che9d_34:

(1, 24980), (4, 24998), (6, 25034), (Start: 20 @25160 has 9 MA's), (32, 25232), (34, 25244), (44, 25322), (45, 25328), (47, 25340),

Gene: Constella_38 Start: 36585, Stop: 36911, Start Num: 13

Candidate Starts for Constella_38:

(Start: 13 @36585 has 37 MA's), (28, 36672), (42, 36765), (52, 36834), (55, 36861),

Gene: Corndog_72 Start: 45808, Stop: 46107, Start Num: 21

Candidate Starts for Corndog_72:

(5, 45652), (Start: 21 @45808 has 30 MA's), (27, 45844), (30, 45865), (33, 45889), (37, 45910), (38, 45919), (40, 45937), (49, 46009), (50, 46018), (51, 46030), (54, 46060),

Gene: Courthouse_45 Start: 36705, Stop: 37031, Start Num: 13

Candidate Starts for Courthouse_45:

(Start: 13 @36705 has 37 MA's), (29, 36795), (30, 36801), (55, 36981),

Gene: Dallas_48 Start: 39979, Stop: 40305, Start Num: 13

Candidate Starts for Dallas_48:

(Start: 8 @39919 has 2 MA's), (9, 39922), (Start: 13 @39979 has 37 MA's), (28, 40066), (42, 40159), (52, 40228), (55, 40255),

Gene: Demsculpinboyz_34 Start: 25143, Stop: 25457, Start Num: 20

Candidate Starts for Demsculpinboyz_34:

(2, 24966), (3, 24981), (6, 25017), (Start: 20 @25143 has 9 MA's), (29, 25206), (31, 25215), (37, 25257), (45, 25332), (46, 25335), (48, 25347), (51, 25377),

Gene: DmpstrDiver_46 Start: 39388, Stop: 39714, Start Num: 13

Candidate Starts for DmpstrDiver_46:

(Start: 13 @39388 has 37 MA's), (29, 39478), (55, 39664),

Gene: Dove_43 Start: 39449, Stop: 39835, Start Num: 8

Candidate Starts for Dove_43:

(Start: 8 @39449 has 2 MA's), (9, 39452), (Start: 13 @39509 has 37 MA's), (28, 39596), (42, 39689), (52, 39758), (55, 39785),

Gene: Duke13_48 Start: 39706, Stop: 40032, Start Num: 13

Candidate Starts for Duke13_48:

(Start: 13 @39706 has 37 MA's), (29, 39796), (55, 39982),

Gene: Dylan_69 Start: 44861, Stop: 45160, Start Num: 21

Candidate Starts for Dylan_69:

(5, 44705), (Start: 21 @44861 has 30 MA's), (27, 44897), (30, 44918), (33, 44942), (38, 44972), (40, 44990), (49, 45062), (50, 45071), (51, 45083), (54, 45113),

Gene: Ejimix_46 Start: 41239, Stop: 41565, Start Num: 13

Candidate Starts for Ejimix_46:

(Start: 8 @41179 has 2 MA's), (9, 41182), (Start: 13 @41239 has 37 MA's), (28, 41326), (42, 41419), (52, 41488), (55, 41515),

Gene: EricMillard_46 Start: 40740, Stop: 41066, Start Num: 13

Candidate Starts for EricMillard_46:

(Start: 8 @40680 has 2 MA's), (9, 40683), (Start: 13 @40740 has 37 MA's), (28, 40827), (42, 40920), (52, 40989), (55, 41016),

Gene: Familton_70 Start: 44771, Stop: 45070, Start Num: 21

Candidate Starts for Familton_70:

(5, 44615), (Start: 21 @44771 has 30 MA's), (27, 44807), (30, 44828), (33, 44852), (38, 44882), (40, 44900), (49, 44972), (50, 44981), (51, 44993), (54, 45023),

Gene: Firecracker_71 Start: 45161, Stop: 45460, Start Num: 21

Candidate Starts for Firecracker_71:

(5, 45005), (Start: 21 @45161 has 30 MA's), (27, 45197), (30, 45218), (33, 45242), (37, 45263), (38, 45272), (40, 45290), (49, 45362), (50, 45371), (51, 45383), (54, 45413),

Gene: FoulBall_69 Start: 44765, Stop: 45064, Start Num: 21

Candidate Starts for FoulBall_69:

(5, 44609), (Start: 21 @44765 has 30 MA's), (27, 44801), (30, 44822), (33, 44846), (38, 44876), (40, 44894), (49, 44966), (50, 44975), (51, 44987), (54, 45017),

Gene: Frankie_32 Start: 26616, Stop: 26909, Start Num: 20

Candidate Starts for Frankie_32:

(Start: 20 @26616 has 9 MA's), (32, 26688), (34, 26700), (44, 26778), (45, 26784), (46, 26787), (47, 26796),

Gene: Gonephishing_47 Start: 38100, Stop: 38426, Start Num: 13

Candidate Starts for Gonephishing_47:

(Start: 13 @38100 has 37 MA's), (29, 38190), (35, 38232), (55, 38376),

Gene: Halley_46 Start: 40453, Stop: 40779, Start Num: 13

Candidate Starts for Halley_46:

(Start: 8 @40393 has 2 MA's), (9, 40396), (Start: 13 @40453 has 37 MA's), (28, 40540), (42, 40633), (52, 40702), (55, 40729),

Gene: Hannaconda_41 Start: 34272, Stop: 34598, Start Num: 13

Candidate Starts for Hannaconda_41:

(11, 34236), (Start: 13 @34272 has 37 MA's), (29, 34362), (30, 34368), (35, 34404), (55, 34548),

Gene: Hidrated_46 Start: 39831, Stop: 40157, Start Num: 13

Candidate Starts for Hidrated_46:

(Start: 13 @39831 has 37 MA's), (28, 39918), (42, 40011), (44, 40029), (52, 40080), (55, 40107),

Gene: HokkenD_39 Start: 38722, Stop: 39048, Start Num: 13

Candidate Starts for HokkenD_39:

(Start: 8 @38662 has 2 MA's), (9, 38665), (Start: 13 @38722 has 37 MA's), (28, 38809), (42, 38902), (52, 38971), (55, 38998),

Gene: Hughesyang_44 Start: 40382, Stop: 40708, Start Num: 13

Candidate Starts for Hughesyang_44:

(Start: 8 @40322 has 2 MA's), (9, 40325), (Start: 13 @40382 has 37 MA's), (28, 40469), (42, 40562), (52, 40631), (55, 40658),

Gene: Idergollasper_69 Start: 44765, Stop: 45064, Start Num: 21

Candidate Starts for Idergollasper_69:

(5, 44609), (Start: 21 @44765 has 30 MA's), (27, 44801), (30, 44822), (33, 44846), (38, 44876), (40, 44894), (49, 44966), (50, 44975), (51, 44987), (54, 45017),

Gene: Imara_67 Start: 44565, Stop: 44864, Start Num: 21

Candidate Starts for Imara_67:

(5, 44409), (Start: 21 @44565 has 30 MA's), (27, 44601), (30, 44622), (33, 44646), (38, 44676), (40, 44694), (49, 44766), (50, 44775), (51, 44787), (54, 44817),

Gene: Jabbawokkie_37 Start: 26591, Stop: 26905, Start Num: 20

Candidate Starts for Jabbawokkie_37:

(6, 26465), (Start: 20 @26591 has 9 MA's), (29, 26654), (31, 26663), (37, 26705), (45, 26780), (46, 26783), (48, 26795), (51, 26825),

Gene: JangDynasty_69 Start: 44851, Stop: 45150, Start Num: 21

Candidate Starts for JangDynasty_69:

(5, 44695), (Start: 21 @44851 has 30 MA's), (27, 44887), (30, 44908), (33, 44932), (37, 44953), (38, 44962), (40, 44980), (49, 45052), (50, 45061), (51, 45073), (54, 45103),

Gene: JuicyJay_48 Start: 42202, Stop: 42528, Start Num: 13

Candidate Starts for JuicyJay_48:

(Start: 13 @42202 has 37 MA's), (28, 42289), (42, 42382), (52, 42451), (55, 42478),

Gene: Kalah2_46 Start: 40790, Stop: 41116, Start Num: 13

Candidate Starts for Kalah2_46:

(Start: 8 @40730 has 2 MA's), (9, 40733), (Start: 13 @40790 has 37 MA's), (28, 40877), (42, 40970), (52, 41039), (55, 41066),

Gene: KashFlow_38 Start: 33893, Stop: 34219, Start Num: 13

Candidate Starts for KashFlow_38:

(11, 33857), (Start: 13 @33893 has 37 MA's), (29, 33983), (30, 33989), (35, 34025), (55, 34169),

Gene: KingPhillip3_68 Start: 44780, Stop: 45079, Start Num: 21

Candidate Starts for KingPhillip3_68:

(5, 44624), (Start: 21 @44780 has 30 MA's), (27, 44816), (30, 44837), (33, 44861), (37, 44882), (38, 44891), (40, 44909), (49, 44981), (50, 44990), (51, 45002), (54, 45032),

Gene: Klein_46 Start: 40014, Stop: 40340, Start Num: 13
Candidate Starts for Klein_46:
(Start: 8 @39954 has 2 MA's), (Start: 13 @40014 has 37 MA's), (28, 40101), (42, 40194), (52, 40263),
(55, 40290),

Gene: Krili_68 Start: 44275, Stop: 44574, Start Num: 21
Candidate Starts for Krili_68:
(5, 44119), (Start: 21 @44275 has 30 MA's), (27, 44311), (30, 44332), (33, 44356), (38, 44386), (40,
44404), (49, 44476), (50, 44485), (51, 44497), (54, 44527),

Gene: Leopard_18 Start: 11842, Stop: 12174, Start Num: 17
Candidate Starts for Leopard_18:
(Start: 17 @11842 has 3 MA's), (34, 11953), (56, 12136),

Gene: LittleE_50 Start: 40192, Stop: 40578, Start Num: 7
Candidate Starts for LittleE_50:
(Start: 7 @40192 has 1 MA's), (Start: 13 @40252 has 37 MA's), (29, 40342), (35, 40384), (55, 40528),

Gene: LittleLaf_52 Start: 29395, Stop: 29733, Start Num: 18
Candidate Starts for LittleLaf_52:
(14, 29386), (Start: 18 @29395 has 1 MA's), (19, 29398), (23, 29431), (24, 29437), (25, 29440), (33,
29506), (39, 29551), (40, 29554), (43, 29584), (57, 29704),

Gene: Lucky2013_45 Start: 36841, Stop: 37167, Start Num: 13
Candidate Starts for Lucky2013_45:
(Start: 13 @36841 has 37 MA's), (29, 36931), (30, 36937), (55, 37117),

Gene: LunaStella_31 Start: 26515, Stop: 26829, Start Num: 20
Candidate Starts for LunaStella_31:
(Start: 20 @26515 has 9 MA's), (29, 26578), (37, 26629), (45, 26704), (46, 26707), (48, 26719), (51,
26749),

Gene: MadKillah_70 Start: 44544, Stop: 44843, Start Num: 21
Candidate Starts for MadKillah_70:
(5, 44388), (Start: 21 @44544 has 30 MA's), (27, 44580), (30, 44601), (33, 44625), (37, 44646), (38,
44655), (40, 44673), (49, 44745), (50, 44754), (51, 44766), (54, 44796),

Gene: Marleymoo_48 Start: 40383, Stop: 40709, Start Num: 13
Candidate Starts for Marleymoo_48:
(Start: 13 @40383 has 37 MA's), (28, 40470), (42, 40563), (55, 40659),

Gene: MiaZeal_45 Start: 36516, Stop: 36842, Start Num: 13
Candidate Starts for MiaZeal_45:
(Start: 13 @36516 has 37 MA's), (29, 36606), (30, 36612), (55, 36792),

Gene: Minerva_51 Start: 41255, Stop: 41581, Start Num: 13
Candidate Starts for Minerva_51:
(Start: 13 @41255 has 37 MA's), (29, 41345), (55, 41531),

Gene: MooMoo_27 Start: 25154, Stop: 25462, Start Num: 20
Candidate Starts for MooMoo_27:
(Start: 20 @25154 has 9 MA's), (29, 25217), (44, 25325), (54, 25406),

Gene: Mori_69 Start: 44806, Stop: 45105, Start Num: 21

Candidate Starts for Mori_69:

(5, 44650), (Start: 21 @44806 has 30 MA's), (27, 44842), (30, 44863), (33, 44887), (37, 44908), (38, 44917), (40, 44935), (49, 45007), (50, 45016), (51, 45028), (54, 45058),

Gene: Murai_70 Start: 44987, Stop: 45286, Start Num: 21

Candidate Starts for Murai_70:

(5, 44831), (Start: 21 @44987 has 30 MA's), (27, 45023), (30, 45044), (33, 45068), (38, 45098), (40, 45116), (49, 45188), (50, 45197), (51, 45209), (54, 45239),

Gene: Nekros_44 Start: 39325, Stop: 39651, Start Num: 13

Candidate Starts for Nekros_44:

(Start: 13 @39325 has 37 MA's), (29, 39415), (35, 39457), (55, 39601),

Gene: Nibley_40 Start: 35347, Stop: 35673, Start Num: 13

Candidate Starts for Nibley_40:

(Start: 13 @35347 has 37 MA's), (29, 35437), (35, 35479), (55, 35623),

Gene: NiebruSaylor_68 Start: 44194, Stop: 44493, Start Num: 21

Candidate Starts for NiebruSaylor_68:

(5, 44038), (Start: 21 @44194 has 30 MA's), (27, 44230), (30, 44251), (33, 44275), (38, 44305), (40, 44323), (49, 44395), (50, 44404), (51, 44416), (54, 44446),

Gene: NihilNomen_45 Start: 40530, Stop: 40856, Start Num: 13

Candidate Starts for NihilNomen_45:

(Start: 8 @40470 has 2 MA's), (9, 40473), (Start: 13 @40530 has 37 MA's), (28, 40617), (42, 40710), (52, 40779), (55, 40806),

Gene: Odette_46 Start: 39763, Stop: 40089, Start Num: 13

Candidate Starts for Odette_46:

(Start: 8 @39703 has 2 MA's), (9, 39706), (Start: 13 @39763 has 37 MA's), (28, 39850), (42, 39943), (52, 40012), (55, 40039),

Gene: Omega_49 Start: 40896, Stop: 41222, Start Num: 13

Candidate Starts for Omega_49:

(Start: 7 @40836 has 1 MA's), (Start: 13 @40896 has 37 MA's), (29, 40986), (35, 41028), (55, 41172),

Gene: Onyinye_19 Start: 11723, Stop: 12055, Start Num: 17

Candidate Starts for Onyinye_19:

(Start: 17 @11723 has 3 MA's), (34, 11834), (56, 12017),

Gene: Optimus_50 Start: 40840, Stop: 41166, Start Num: 13

Candidate Starts for Optimus_50:

(Start: 13 @40840 has 37 MA's), (29, 40930), (55, 41116),

Gene: Phoebus_45 Start: 40740, Stop: 41066, Start Num: 13

Candidate Starts for Phoebus_45:

(Start: 8 @40680 has 2 MA's), (9, 40683), (Start: 13 @40740 has 37 MA's), (28, 40827), (42, 40920), (52, 40989), (55, 41016),

Gene: Porcelain_44 Start: 36516, Stop: 36842, Start Num: 13

Candidate Starts for Porcelain_44:

(Start: 13 @36516 has 37 MA's), (29, 36606), (30, 36612), (55, 36792),

Gene: Pound_47 Start: 41761, Stop: 42087, Start Num: 13

Candidate Starts for Pound_47:

(Start: 8 @41701 has 2 MA's), (9, 41704), (Start: 13 @41761 has 37 MA's), (28, 41848), (42, 41941), (52, 42010), (55, 42037),

Gene: Rearden_41 Start: 36738, Stop: 37106, Start Num: 10

Candidate Starts for Rearden_41:

(10, 36738), (Start: 13 @36780 has 37 MA's), (29, 36870), (30, 36876), (35, 36912), (55, 37056),

Gene: Redno2_44 Start: 37435, Stop: 37821, Start Num: 8

Candidate Starts for Redno2_44:

(Start: 8 @37435 has 2 MA's), (9, 37438), (Start: 13 @37495 has 37 MA's), (28, 37582), (42, 37675), (52, 37744), (55, 37771),

Gene: Ryadel_73 Start: 45599, Stop: 45898, Start Num: 21

Candidate Starts for Ryadel_73:

(5, 45443), (Start: 21 @45599 has 30 MA's), (27, 45635), (30, 45656), (33, 45680), (38, 45710), (40, 45728), (49, 45800), (50, 45809), (51, 45821), (54, 45851),

Gene: Schatzie_43 Start: 39511, Stop: 39837, Start Num: 13

Candidate Starts for Schatzie_43:

(Start: 8 @39451 has 2 MA's), (9, 39454), (Start: 13 @39511 has 37 MA's), (28, 39598), (42, 39691), (52, 39760), (55, 39787),

Gene: SchoolBus_69 Start: 44759, Stop: 45046, Start Num: 21

Candidate Starts for SchoolBus_69:

(5, 44603), (Start: 21 @44759 has 30 MA's), (27, 44795), (30, 44816), (33, 44840), (38, 44870), (40, 44888), (49, 44948), (50, 44957), (51, 44969), (54, 44999),

Gene: Schuy_70 Start: 44550, Stop: 44849, Start Num: 21

Candidate Starts for Schuy_70:

(5, 44394), (Start: 21 @44550 has 30 MA's), (27, 44586), (30, 44607), (33, 44631), (38, 44661), (40, 44679), (49, 44751), (50, 44760), (51, 44772), (54, 44802),

Gene: Shaboozey_37 Start: 33633, Stop: 33959, Start Num: 13

Candidate Starts for Shaboozey_37:

(Start: 13 @33633 has 37 MA's), (29, 33723), (35, 33765), (55, 33909),

Gene: Shida_69 Start: 44457, Stop: 44756, Start Num: 21

Candidate Starts for Shida_69:

(5, 44301), (Start: 21 @44457 has 30 MA's), (27, 44493), (30, 44514), (33, 44538), (38, 44568), (40, 44586), (49, 44658), (50, 44667), (51, 44679), (54, 44709),

Gene: Smooch_72 Start: 46503, Stop: 46802, Start Num: 21

Candidate Starts for Smooch_72:

(5, 46347), (Start: 21 @46503 has 30 MA's), (27, 46539), (30, 46560), (33, 46584), (37, 46605), (38, 46614), (40, 46632), (49, 46704), (50, 46713), (51, 46725), (54, 46755),

Gene: Squint_44 Start: 36635, Stop: 36961, Start Num: 13

Candidate Starts for Squint_44:

(Start: 13 @36635 has 37 MA's), (29, 36725), (30, 36731), (55, 36911),

Gene: Stellammi_31 Start: 25052, Stop: 25357, Start Num: 16

Candidate Starts for Stellammi_31:

(16, 25052), (22, 25091), (26, 25106), (27, 25118), (33, 25163), (36, 25178), (41, 25220), (42, 25223), (52, 25277), (53, 25295),

Gene: Superphikiman_45 Start: 36707, Stop: 37033, Start Num: 13

Candidate Starts for Superphikiman_45:

(Start: 13 @36707 has 37 MA's), (29, 36797), (30, 36803), (55, 36983),

Gene: TChen_29 Start: 26516, Stop: 26830, Start Num: 20

Candidate Starts for TChen_29:

(Start: 20 @26516 has 9 MA's), (29, 26579), (37, 26630), (45, 26705), (46, 26708), (48, 26720), (51, 26750),

Gene: TelAviv_66 Start: 44732, Stop: 45031, Start Num: 21

Candidate Starts for TelAviv_66:

(5, 44576), (Start: 21 @44732 has 30 MA's), (27, 44768), (30, 44789), (33, 44813), (38, 44843), (40, 44861), (49, 44933), (50, 44942), (51, 44954), (54, 44984),

Gene: Thibault_40 Start: 37945, Stop: 38271, Start Num: 13

Candidate Starts for Thibault_40:

(Start: 13 @37945 has 37 MA's), (28, 38032), (42, 38125), (55, 38221),

Gene: ThreeRngTarjay_44 Start: 40590, Stop: 40916, Start Num: 13

Candidate Starts for ThreeRngTarjay_44:

(Start: 8 @40530 has 2 MA's), (9, 40533), (Start: 13 @40590 has 37 MA's), (28, 40677), (42, 40770), (52, 40839), (55, 40866),

Gene: Toron_30 Start: 26439, Stop: 26747, Start Num: 20

Candidate Starts for Toron_30:

(12, 26409), (Start: 15 @26418 has 1 MA's), (Start: 20 @26439 has 9 MA's), (29, 26502), (44, 26610),

Gene: Vagabond_69 Start: 44595, Stop: 44894, Start Num: 21

Candidate Starts for Vagabond_69:

(5, 44439), (Start: 21 @44595 has 30 MA's), (27, 44631), (30, 44652), (33, 44676), (38, 44706), (40, 44724), (49, 44796), (50, 44805), (51, 44817), (54, 44847),

Gene: Vorrrps_69 Start: 44807, Stop: 45106, Start Num: 21

Candidate Starts for Vorrrps_69:

(5, 44651), (Start: 21 @44807 has 30 MA's), (27, 44843), (30, 44864), (33, 44888), (37, 44909), (38, 44918), (40, 44936), (49, 45008), (50, 45017), (51, 45029), (54, 45059),

Gene: Wanda_51 Start: 39732, Stop: 40058, Start Num: 13

Candidate Starts for Wanda_51:

(Start: 13 @39732 has 37 MA's), (29, 39822), (55, 40008),

Gene: Wildflower_69 Start: 44319, Stop: 44618, Start Num: 21

Candidate Starts for Wildflower_69:

(Start: 21 @44319 has 30 MA's), (27, 44355), (30, 44376), (33, 44400), (37, 44421), (38, 44430), (40, 44448), (49, 44520), (50, 44529), (51, 44541), (54, 44571),

Gene: Winget_70 Start: 45025, Stop: 45324, Start Num: 21

Candidate Starts for Winget_70:

(5, 44869), (Start: 21 @45025 has 30 MA's), (27, 45061), (30, 45082), (33, 45106), (38, 45136), (40, 45154), (49, 45226), (50, 45235), (51, 45247), (54, 45277),

Gene: Wogge42_68 Start: 44466, Stop: 44765, Start Num: 21

Candidate Starts for Wogge42_68:

(5, 44310), (Start: 21 @44466 has 30 MA's), (27, 44502), (30, 44523), (33, 44547), (37, 44568), (38, 44577), (40, 44595), (49, 44667), (50, 44676), (51, 44688), (54, 44718),

Gene: Xiaokay_41 Start: 37348, Stop: 37674, Start Num: 13

Candidate Starts for Xiaokay_41:

(Start: 13 @37348 has 37 MA's), (28, 37435), (42, 37528), (52, 37597), (55, 37624),

Gene: Yeet_44 Start: 39749, Stop: 40075, Start Num: 13

Candidate Starts for Yeet_44:

(Start: 8 @39689 has 2 MA's), (9, 39692), (Start: 13 @39749 has 37 MA's), (28, 39836), (42, 39929), (52, 39998), (55, 40025),

Gene: Yoshi_36 Start: 25524, Stop: 25847, Start Num: 15

Candidate Starts for Yoshi_36:

(12, 25515), (Start: 15 @25524 has 1 MA's), (Start: 20 @25545 has 9 MA's), (29, 25608), (44, 25716),

Gene: YoyoKar_67 Start: 44309, Stop: 44608, Start Num: 21

Candidate Starts for YoyoKar_67:

(5, 44153), (Start: 21 @44309 has 30 MA's), (27, 44345), (30, 44366), (33, 44390), (38, 44420), (40, 44438), (49, 44510), (50, 44519), (51, 44531), (54, 44561),

Gene: YungJamal_74 Start: 46217, Stop: 46516, Start Num: 21

Candidate Starts for YungJamal_74:

(5, 46061), (Start: 21 @46217 has 30 MA's), (27, 46253), (30, 46274), (33, 46298), (37, 46319), (38, 46328), (40, 46346), (50, 46427), (51, 46439), (54, 46469),

Gene: Zakhe101_68 Start: 44865, Stop: 45164, Start Num: 21

Candidate Starts for Zakhe101_68:

(5, 44709), (Start: 21 @44865 has 30 MA's), (27, 44901), (30, 44922), (33, 44946), (38, 44976), (40, 44994), (49, 45066), (50, 45075), (51, 45087), (54, 45117),

Gene: Zapner_36 Start: 26592, Stop: 26906, Start Num: 20

Candidate Starts for Zapner_36:

(6, 26466), (Start: 20 @26592 has 9 MA's), (29, 26655), (31, 26664), (37, 26706), (45, 26781), (46, 26784), (48, 26796), (51, 26826),

Gene: Zebo_69 Start: 44768, Stop: 45055, Start Num: 21

Candidate Starts for Zebo_69:

(5, 44612), (Start: 21 @44768 has 30 MA's), (27, 44804), (30, 44825), (33, 44849), (38, 44879), (40, 44897), (49, 44957), (50, 44966), (51, 44978), (54, 45008),

Gene: Zelink_47 Start: 41534, Stop: 41860, Start Num: 13

Candidate Starts for Zelink_47:

(Start: 8 @41474 has 2 MA's), (9, 41477), (Start: 13 @41534 has 37 MA's), (28, 41621), (42, 41714), (52, 41783), (55, 41810),