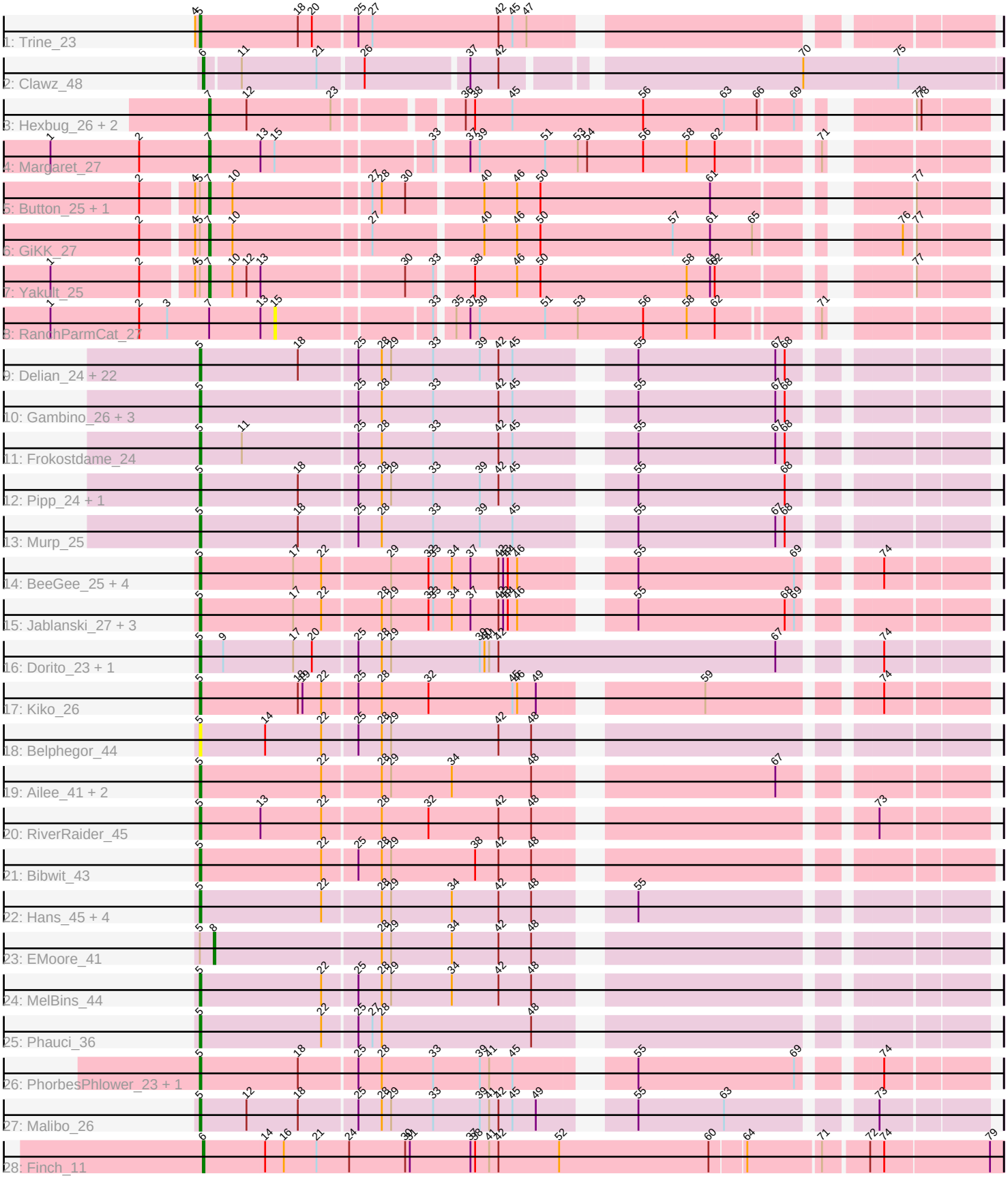
Pham 193974


1: Trine_23
2: Clawz_48
3: Hexbug_26 + 2
4: Margaret_27
5: Button_25 + 1
6: GiKK_27
7: Yakult_25
8: RanchParmCat_27
9: Delian_24 + 22
10: Gambino_26 + 3
11: Frokostdame_24
12: Pipp_24 + 1
13: Murp_25
14: BeeGee_25 + 4
15: Jablanski_27 + 3
16: Dorito_23 + 1
17: Kiko_26
18: Belphegor_44
19: Ailee_41 + 2
20: RiverRaider_45
21: Bibwit_43
22: Hans_45 + 4
23: EMoore_41
24: MelBins_44
25: Phauci_36
26: PhorbesPhlower_23 + 1
27: Malibo_26
28: Finch_11

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 193974 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193974 has 72 members, 4 are drafts.

Phages represented in each track:
• Track 1 : Trine_23
• Track 2 : Clawz_48
• Track 3 : Hexbug_26, Nodigi_26, Orla_26
• Track 4 : Margaret_27
• Track 5 : Button_25, Jamzy_27
• Track 6 : GiKK_27
• Track 7 : Yakult_25
• Track 8 : RanchParmCat_27
• Track 9 : Delian_24, Barco_24, Melba_24, Zarbodnamra_24, JasperJr_24, Fenry_23, Archis_25, Samba_24, BlingBling_24, Hitter_24, Walrus_26, UmaThurman_24, Guacamole_24, Malachai_25, PhrostedPhlake_26, Utz_24, Jalammah_26, Begonia_25, MintFen_24, Wisp_23, CaptainKirk2_24, Lysidious_25, Mellie_23
• Track 10 : Gambino_26, Blueberry_26, Azula_26, MissRona_26
• Track 11 : Frokostdame_24
• Track 12 : Pipp_24, Bunnybear_23
• Track 13 : Murp_25
• Track 14 : BeeGee_25, Confidence_25, ODay_31, Cashline_25, Denise_21
• Track 15 : Jablanski_27, Pytheas_27, Posh_27, Wrigley_27
• Track 16 : Dorito_23, PhriskyACE_23
• Track 17 : Kiko_26
• Track 18 : Belphegor_44
• Track 19 : Ailee_41, Sedona_44, Keitabear_44
• Track 20 : RiverRaider_45
• Track 21 : Bibwit_43
• Track 22 : Hans_45, Inspectinfecti_44, Leonard_43, Phinally_43, Ali17_41
• Track 23 : EMoore_41
• Track 24 : MelBins_44
• Track 25 : Phauci_36
• Track 26 : PhorbesPhlower_23, Morkie_23
• Track 27 : Malibo_26
• Track 28 : Finch_11

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

The start number called the most often in the published annotations is 5, it was called in 57 of the 68 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Ailee_41, Ali17_41, Archis_25, Azula_26, Barco_24, BeeGee_25, Begonia_25, Belphegor_44, Bibwit_43, BlingBling_24, Blueberry_26, Bunnybear_23, CaptainKirk2_24, Cashline_25, Confidence_25, Delian_24, Denise_21, Dorito_23, Fenry_23, Frokostdame_24, Gambino_26, Guacamole_24, Hans_45, Hitter_24, Inspectinfecti_44, Jablanski_27, Jalammah_26, JasperJr_24, Keitabear_44, Kiko_26, Leonard_43, Lysidious_25, Malachai_25, Malibo_26, MelBins_44, Melba_24, Mellie_23, MintFen_24, MissRona_26, Morkie_23, Murp_25, ODay_31, Phauci_36, Phinally_43, PhorbesPhlower_23, PhriskyACE_23, PhrostedPhlake_26, Pipp_24, Posh_27, Pytheas_27, RiverRaider_45, Samba_24, Sedona_44, Trine_23, UmaThurman_24, Utz_24, Walrus_26, Wisp_23, Wrigley_27, Zarbodnamra_24,

Genes that have the "Most Annotated" start but do not call it:
• Button_25, EMoore_41, GiKK_27, Jamzy_27, Yakult_25,

Genes that do not have the "Most Annotated" start:
• Clawz_48, Finch_11, Hexbug_26, Margaret_27, Nodigi_26, Orla_26, RanchParmCat_27,

Summary by start number:

Start 5:
• Found in 65 of 72 (90.3%) of genes in pham
• Manual Annotations of this start: 57 of 68
• Called 92.3% of time when present
• Phage (with cluster) where this start called: Ailee_41 (DE1), Ali17_41 (DE2), Archis_25 (CV), Azula_26 (CV), Barco_24 (CV), BeeGee_25 (CY), Begonia_25 (CV), Belphegor_44 (DE), Bibwit_43 (DE1), BlingBling_24 (CV), Blueberry_26 (CV), Bunnybear_23 (CZ), CaptainKirk2_24 (CV), Cashline_25 (CY), Confidence_25 (CY1), Delian_24 (CV), Denise_21 (CZ5), Dorito_23 (CZ4), Fenry_23 (CV), Frokostdame_24 (CV), Gambino_26 (CV), Guacamole_24 (CV), Hans_45 (DE2), Hitter_24 (CV), Inspectinfecti_44 (DE2), Jablanski_27 (CY), Jalammah_26 (CV), JasperJr_24 (CV), Keitabear_44 (DE1), Kiko_26 (DB), Leonard_43 (DE2), Lysidious_25 (CV), Malachai_25 (CV), Malibo_26 (DW), MelBins_44 (DE2), Melba_24 (CV), Mellie_23 (CV), MintFen_24 (CV), MissRona_26 (CV), Morkie_23 (DH), Murp_25 (CV), ODay_31 (DN), Phauci_36 (DE2), Phinally_43 (DE2), PhorbesPhlower_23 (DH), PhriskyACE_23 (CZ4), PhrostedPhlake_26 (CV), Pipp_24 (CV), Posh_27 (CY), Pytheas_27 (CY), RiverRaider_45 (DE1), Samba_24 (CV), Sedona_44 (DE1), Trine_23 (CD), UmaThurman_24 (CV), Utz_24 (CV), Walrus_26 (CV), Wisp_23 (CV), Wrigley_27 (CY), Zarbodnamra_24 (CV),

Start 6:
• Found in 2 of 72 (2.8%) of genes in pham
• Manual Annotations of this start: 2 of 68
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Clawz_48 (CP), Finch_11 (singleton),

Start 7:
• Found in 9 of 72 (12.5%) of genes in pham

• Manual Annotations of this start: 8 of 68
• Called 88.9% of time when present
• Phage (with cluster) where this start called: Button_25 (CT), GiKK_27 (CT), Hexbug_26 (CT), Jamzy_27 (CT), Margaret_27 (CT), Nodigi_26 (CT), Orla_26 (CT), Yakult_25 (CT),

Start 8:
• Found in 1 of 72 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 68
• Called 100.0% of time when present
• Phage (with cluster) where this start called: EMoore_41 (DE2),

Start 15:
• Found in 2 of 72 (2.8%) of genes in pham
• No Manual Annotations of this start.
• Called 50.0% of time when present
• Phage (with cluster) where this start called: RanchParmCat_27 (CT),

Summary by clusters:

There are 17 clusters represented in this pham: DN, CY1, DH, DE1, DE2, DE, DB, singleton, CZ4, CD, CZ, CY, DW, CP, CZ5, CV, CT,

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

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

Info for manual annotations of cluster CT:
•Start number 7 was manually annotated 8 times for cluster CT.

Info for manual annotations of cluster CV:
•Start number 5 was manually annotated 29 times for cluster CV.

Info for manual annotations of cluster CY:
•Start number 5 was manually annotated 6 times for cluster CY.

Info for manual annotations of cluster CY1:
•Start number 5 was manually annotated 1 time for cluster CY1.

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

Info for manual annotations of cluster CZ4:
•Start number 5 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster CZ5:
•Start number 5 was manually annotated 1 time for cluster CZ5.

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

Info for manual annotations of cluster DE1:
•Start number 5 was manually annotated 5 times for cluster DE1.

Info for manual annotations of cluster DE2:
•Start number 5 was manually annotated 7 times for cluster DE2.
•Start number 8 was manually annotated 1 time for cluster DE2.

Info for manual annotations of cluster DH:
•Start number 5 was manually annotated 2 times for cluster DH.

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

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

Gene Information:

Gene: Ailee_41 Start: 38585, Stop: 39043, Start Num: 5
Candidate Starts for Ailee_41:
(Start: 5 @38585 has 57 MA's), (22, 38663), (28, 38699), (29, 38705), (34, 38744), (48, 38795), (67, 38930),

Gene: Ali17_41 Start: 37879, Stop: 38337, Start Num: 5
Candidate Starts for Ali17_41:
(Start: 5 @37879 has 57 MA's), (22, 37957), (28, 37993), (29, 37999), (34, 38038), (42, 38068), (48, 38089), (55, 38137),

Gene: Archis_25 Start: 20911, Stop: 21369, Start Num: 5
Candidate Starts for Archis_25:
(Start: 5 @20911 has 57 MA's), (18, 20974), (25, 21010), (28, 21025), (29, 21031), (33, 21058), (39, 21088), (42, 21100), (45, 21109), (55, 21169), (67, 21256), (68, 21262),

Gene: Azula_26 Start: 21012, Stop: 21470, Start Num: 5
Candidate Starts for Azula_26:
(Start: 5 @21012 has 57 MA's), (25, 21111), (28, 21126), (33, 21159), (42, 21201), (45, 21210), (55, 21270), (67, 21357), (68, 21363),

Gene: Barco_24 Start: 20700, Stop: 21158, Start Num: 5
Candidate Starts for Barco_24:
(Start: 5 @20700 has 57 MA's), (18, 20763), (25, 20799), (28, 20814), (29, 20820), (33, 20847), (39, 20877), (42, 20889), (45, 20898), (55, 20958), (67, 21045), (68, 21051),

Gene: BeeGee_25 Start: 21331, Stop: 21789, Start Num: 5
Candidate Starts for BeeGee_25:
(Start: 5 @21331 has 57 MA's), (17, 21391), (22, 21409), (29, 21451), (32, 21475), (33, 21478), (34, 21490), (37, 21502), (42, 21520), (43, 21523), (44, 21526), (46, 21532), (55, 21589), (69, 21688), (74, 21727),

Gene: Begonia_25 Start: 21181, Stop: 21639, Start Num: 5

Candidate Starts for Begonia_25:
(Start: 5 @21181 has 57 MA's), (18, 21244), (25, 21280), (28, 21295), (29, 21301), (33, 21328), (39, 21358), (42, 21370), (45, 21379), (55, 21439), (67, 21526), (68, 21532),

Gene: Belphegor_44 Start: 39930, Stop: 40388, Start Num: 5
Candidate Starts for Belphegor_44:
(Start: 5 @39930 has 57 MA's), (14, 39972), (22, 40008), (25, 40029), (28, 40044), (29, 40050), (42, 40119), (48, 40140),

Gene: Bibwit_43 Start: 38519, Stop: 38980, Start Num: 5
Candidate Starts for Bibwit_43:
(Start: 5 @38519 has 57 MA's), (22, 38597), (25, 38618), (28, 38633), (29, 38639), (38, 38693), (42, 38708), (48, 38729),

Gene: BlingBling_24 Start: 20700, Stop: 21158, Start Num: 5
Candidate Starts for BlingBling_24:
(Start: 5 @20700 has 57 MA's), (18, 20763), (25, 20799), (28, 20814), (29, 20820), (33, 20847), (39, 20877), (42, 20889), (45, 20898), (55, 20958), (67, 21045), (68, 21051),

Gene: Blueberry_26 Start: 21012, Stop: 21470, Start Num: 5
Candidate Starts for Blueberry_26:
(Start: 5 @21012 has 57 MA's), (25, 21111), (28, 21126), (33, 21159), (42, 21201), (45, 21210), (55, 21270), (67, 21357), (68, 21363),

Gene: Bunnybear_23 Start: 21777, Stop: 22235, Start Num: 5
Candidate Starts for Bunnybear_23:
(Start: 5 @21777 has 57 MA's), (18, 21840), (25, 21876), (28, 21891), (29, 21897), (33, 21924), (39, 21954), (42, 21966), (45, 21975), (55, 22035), (68, 22128),

Gene: Button_25 Start: 19038, Stop: 19490, Start Num: 7
Candidate Starts for Button_25:
(2, 18999), (4, 19029), (Start: 5 @19032 has 57 MA's), (Start: 7 @19038 has 8 MA's), (10, 19053), (27, 19137), (28, 19143), (30, 19158), (40, 19203), (46, 19224), (50, 19239), (61, 19347), (77, 19446),

Gene: CaptainKirk2_24 Start: 20721, Stop: 21179, Start Num: 5
Candidate Starts for CaptainKirk2_24:
(Start: 5 @20721 has 57 MA's), (18, 20784), (25, 20820), (28, 20835), (29, 20841), (33, 20868), (39, 20898), (42, 20910), (45, 20919), (55, 20979), (67, 21066), (68, 21072),

Gene: Cashline_25 Start: 21198, Stop: 21656, Start Num: 5
Candidate Starts for Cashline_25:
(Start: 5 @21198 has 57 MA's), (17, 21258), (22, 21276), (29, 21318), (32, 21342), (33, 21345), (34, 21357), (37, 21369), (42, 21387), (43, 21390), (44, 21393), (46, 21399), (55, 21456), (69, 21555), (74, 21594),

Gene: Clawz_48 Start: 26409, Stop: 26885, Start Num: 6
Candidate Starts for Clawz_48:
(Start: 6 @26409 has 2 MA's), (11, 26430), (21, 26478), (26, 26505), (37, 26568), (42, 26586), (70, 26760), (75, 26820),

Gene: Confidence_25 Start: 21361, Stop: 21819, Start Num: 5
Candidate Starts for Confidence_25:

(Start: 5 @21361 has 57 MA's), (17, 21421), (22, 21439), (29, 21481), (32, 21505), (33, 21508), (34, 21520), (37, 21532), (42, 21550), (43, 21553), (44, 21556), (46, 21562), (55, 21619), (69, 21718), (74, 21757),

Gene: Delian_24 Start: 20721, Stop: 21179, Start Num: 5
Candidate Starts for Delian_24:
(Start: 5 @20721 has 57 MA's), (18, 20784), (25, 20820), (28, 20835), (29, 20841), (33, 20868), (39, 20898), (42, 20910), (45, 20919), (55, 20979), (67, 21066), (68, 21072),

Gene: Denise_21 Start: 18426, Stop: 18884, Start Num: 5
Candidate Starts for Denise_21:
(Start: 5 @18426 has 57 MA's), (17, 18486), (22, 18504), (29, 18546), (32, 18570), (33, 18573), (34, 18585), (37, 18597), (42, 18615), (43, 18618), (44, 18621), (46, 18627), (55, 18684), (69, 18783), (74, 18822),

Gene: Dorito_23 Start: 20203, Stop: 20682, Start Num: 5
Candidate Starts for Dorito_23:
(Start: 5 @20203 has 57 MA's), (9, 20218), (17, 20263), (20, 20275), (25, 20302), (28, 20317), (29, 20323), (39, 20380), (40, 20383), (41, 20386), (42, 20392), (67, 20569), (74, 20620),

Gene: EMoore_41 Start: 39068, Stop: 39517, Start Num: 8
Candidate Starts for EMoore_41:
(Start: 5 @39059 has 57 MA's), (Start: 8 @39068 has 1 MA's), (28, 39173), (29, 39179), (34, 39218), (42, 39248), (48, 39269),

Gene: Fenry_23 Start: 20419, Stop: 20877, Start Num: 5
Candidate Starts for Fenry_23:
(Start: 5 @20419 has 57 MA's), (18, 20482), (25, 20518), (28, 20533), (29, 20539), (33, 20566), (39, 20596), (42, 20608), (45, 20617), (55, 20677), (67, 20764), (68, 20770),

Gene: Finch_11 Start: 5519, Stop: 6019, Start Num: 6
Candidate Starts for Finch_11:
(Start: 6 @5519 has 2 MA's), (14, 5558), (16, 5570), (21, 5591), (24, 5612), (30, 5648), (31, 5651), (37, 5690), (38, 5693), (41, 5702), (42, 5708), (52, 5747), (60, 5843), (64, 5864), (71, 5909), (72, 5936), (74, 5945), (79, 6011),

Gene: Frokostdame_24 Start: 20666, Stop: 21124, Start Num: 5
Candidate Starts for Frokostdame_24:
(Start: 5 @20666 has 57 MA's), (11, 20693), (25, 20765), (28, 20780), (33, 20813), (42, 20855), (45, 20864), (55, 20924), (67, 21011), (68, 21017),

Gene: Gambino_26 Start: 21012, Stop: 21470, Start Num: 5
Candidate Starts for Gambino_26:
(Start: 5 @21012 has 57 MA's), (25, 21111), (28, 21126), (33, 21159), (42, 21201), (45, 21210), (55, 21270), (67, 21357), (68, 21363),

Gene: GiKK_27 Start: 19337, Stop: 19789, Start Num: 7
Candidate Starts for GiKK_27:
(2, 19298), (4, 19328), (Start: 5 @19331 has 57 MA's), (Start: 7 @19337 has 8 MA's), (10, 19352), (27, 19436), (40, 19502), (46, 19523), (50, 19538), (57, 19622), (61, 19646), (65, 19673), (76, 19739), (77, 19745),

Gene: Guacamole_24 Start: 20704, Stop: 21162, Start Num: 5

Candidate Starts for Guacamole_24:
(Start: 5 @20704 has 57 MA's), (18, 20767), (25, 20803), (28, 20818), (29, 20824), (33, 20851), (39, 20881), (42, 20893), (45, 20902), (55, 20962), (67, 21049), (68, 21055),

Gene: Hans_45 Start: 38519, Stop: 38977, Start Num: 5
Candidate Starts for Hans_45:
(Start: 5 @38519 has 57 MA's), (22, 38597), (28, 38633), (29, 38639), (34, 38678), (42, 38708), (48, 38729), (55, 38777),

Gene: Hexbug_26 Start: 20025, Stop: 20471, Start Num: 7
Candidate Starts for Hexbug_26:
(Start: 7 @20025 has 8 MA's), (12, 20049), (23, 20103), (36, 20172), (38, 20178), (45, 20202), (56, 20286), (63, 20337), (66, 20358), (69, 20379), (77, 20427), (78, 20430),

Gene: Hitter_24 Start: 20700, Stop: 21158, Start Num: 5
Candidate Starts for Hitter_24:
(Start: 5 @20700 has 57 MA's), (18, 20763), (25, 20799), (28, 20814), (29, 20820), (33, 20847), (39, 20877), (42, 20889), (45, 20898), (55, 20958), (67, 21045), (68, 21051),

Gene: Inspectinfecti_44 Start: 38965, Stop: 39423, Start Num: 5
Candidate Starts for Inspectinfecti_44:
(Start: 5 @38965 has 57 MA's), (22, 39043), (28, 39079), (29, 39085), (34, 39124), (42, 39154), (48, 39175), (55, 39223),

Gene: Jablanski_27 Start: 22440, Stop: 22898, Start Num: 5
Candidate Starts for Jablanski_27:
(Start: 5 @22440 has 57 MA's), (17, 22500), (22, 22518), (28, 22554), (29, 22560), (32, 22584), (33, 22587), (34, 22599), (37, 22611), (42, 22629), (43, 22632), (44, 22635), (46, 22641), (55, 22698), (68, 22791), (69, 22797),

Gene: Jalammah_26 Start: 21494, Stop: 21952, Start Num: 5
Candidate Starts for Jalammah_26:
(Start: 5 @21494 has 57 MA's), (18, 21557), (25, 21593), (28, 21608), (29, 21614), (33, 21641), (39, 21671), (42, 21683), (45, 21692), (55, 21752), (67, 21839), (68, 21845),

Gene: Jamzy_27 Start: 19351, Stop: 19803, Start Num: 7
Candidate Starts for Jamzy_27:
(2, 19312), (4, 19342), (Start: 5 @19345 has 57 MA's), (Start: 7 @19351 has 8 MA's), (10, 19366), (27, 19450), (28, 19456), (30, 19471), (40, 19516), (46, 19537), (50, 19552), (61, 19660), (77, 19759),

Gene: JasperJr_24 Start: 20704, Stop: 21162, Start Num: 5
Candidate Starts for JasperJr_24:
(Start: 5 @20704 has 57 MA's), (18, 20767), (25, 20803), (28, 20818), (29, 20824), (33, 20851), (39, 20881), (42, 20893), (45, 20902), (55, 20962), (67, 21049), (68, 21055),

Gene: Keitabear_44 Start: 40216, Stop: 40674, Start Num: 5
Candidate Starts for Keitabear_44:
(Start: 5 @40216 has 57 MA's), (22, 40294), (28, 40330), (29, 40336), (34, 40375), (48, 40426), (67, 40561),

Gene: Kiko_26 Start: 20953, Stop: 21411, Start Num: 5
Candidate Starts for Kiko_26:

(Start: 5 @20953 has 57 MA's), (18, 21016), (19, 21019), (22, 21031), (25, 21052), (28, 21067), (32, 21097), (45, 21151), (46, 21154), (49, 21166), (59, 21253), (74, 21349),

Gene: Leonard_43 Start: 38604, Stop: 39062, Start Num: 5
Candidate Starts for Leonard_43:
(Start: 5 @38604 has 57 MA's), (22, 38682), (28, 38718), (29, 38724), (34, 38763), (42, 38793), (48, 38814), (55, 38862),

Gene: Lysidious_25 Start: 21224, Stop: 21682, Start Num: 5
Candidate Starts for Lysidious_25:
(Start: 5 @21224 has 57 MA's), (18, 21287), (25, 21323), (28, 21338), (29, 21344), (33, 21371), (39, 21401), (42, 21413), (45, 21422), (55, 21482), (67, 21569), (68, 21575),

Gene: Malachai_25 Start: 21181, Stop: 21639, Start Num: 5
Candidate Starts for Malachai_25:
(Start: 5 @21181 has 57 MA's), (18, 21244), (25, 21280), (28, 21295), (29, 21301), (33, 21328), (39, 21358), (42, 21370), (45, 21379), (55, 21439), (67, 21526), (68, 21532),

Gene: Malibo_26 Start: 20919, Stop: 21377, Start Num: 5
Candidate Starts for Malibo_26:
(Start: 5 @20919 has 57 MA's), (12, 20949), (18, 20982), (25, 21018), (28, 21033), (29, 21039), (33, 21066), (39, 21096), (41, 21102), (42, 21108), (45, 21117), (49, 21132), (55, 21177), (63, 21231), (73, 21312),

Gene: Margaret_27 Start: 19721, Stop: 20167, Start Num: 7
Candidate Starts for Margaret_27:
(1, 19619), (2, 19676), (Start: 7 @19721 has 8 MA's), (13, 19754), (15, 19763), (33, 19856), (37, 19874), (39, 19880), (51, 19922), (53, 19943), (54, 19949), (56, 19985), (58, 20012), (62, 20030), (71, 20084),

Gene: MelBins_44 Start: 38751, Stop: 39209, Start Num: 5
Candidate Starts for MelBins_44:
(Start: 5 @38751 has 57 MA's), (22, 38829), (25, 38850), (28, 38865), (29, 38871), (34, 38910), (42, 38940), (48, 38961),

Gene: Melba_24 Start: 20700, Stop: 21158, Start Num: 5
Candidate Starts for Melba_24:
(Start: 5 @20700 has 57 MA's), (18, 20763), (25, 20799), (28, 20814), (29, 20820), (33, 20847), (39, 20877), (42, 20889), (45, 20898), (55, 20958), (67, 21045), (68, 21051),

Gene: Mellie_23 Start: 20461, Stop: 20919, Start Num: 5
Candidate Starts for Mellie_23:
(Start: 5 @20461 has 57 MA's), (18, 20524), (25, 20560), (28, 20575), (29, 20581), (33, 20608), (39, 20638), (42, 20650), (45, 20659), (55, 20719), (67, 20806), (68, 20812),

Gene: MintFen_24 Start: 20700, Stop: 21158, Start Num: 5
Candidate Starts for MintFen_24:
(Start: 5 @20700 has 57 MA's), (18, 20763), (25, 20799), (28, 20814), (29, 20820), (33, 20847), (39, 20877), (42, 20889), (45, 20898), (55, 20958), (67, 21045), (68, 21051),

Gene: MissRona_26 Start: 21012, Stop: 21470, Start Num: 5
Candidate Starts for MissRona_26:

(Start: 5 @21012 has 57 MA's), (25, 21111), (28, 21126), (33, 21159), (42, 21201), (45, 21210), (55, 21270), (67, 21357), (68, 21363),

Gene: Morkie_23 Start: 18982, Stop: 19440, Start Num: 5
Candidate Starts for Morkie_23:
(Start: 5 @18982 has 57 MA's), (18, 19045), (25, 19081), (28, 19096), (33, 19129), (39, 19159), (41, 19165), (45, 19180), (55, 19240), (69, 19339), (74, 19378),

Gene: Murp_25 Start: 20968, Stop: 21426, Start Num: 5
Candidate Starts for Murp_25:
(Start: 5 @20968 has 57 MA's), (18, 21031), (25, 21067), (28, 21082), (33, 21115), (39, 21145), (45, 21166), (55, 21226), (67, 21313), (68, 21319),

Gene: Nodigi_26 Start: 19994, Stop: 20440, Start Num: 7
Candidate Starts for Nodigi_26:
(Start: 7 @19994 has 8 MA's), (12, 20018), (23, 20072), (36, 20141), (38, 20147), (45, 20171), (56, 20255), (63, 20306), (66, 20327), (69, 20348), (77, 20396), (78, 20399),

Gene: ODay_31 Start: 22917, Stop: 23375, Start Num: 5
Candidate Starts for ODay_31:
(Start: 5 @22917 has 57 MA's), (17, 22977), (22, 22995), (29, 23037), (32, 23061), (33, 23064), (34, 23076), (37, 23088), (42, 23106), (43, 23109), (44, 23112), (46, 23118), (55, 23175), (69, 23274), (74, 23313),

Gene: Orla_26 Start: 19998, Stop: 20444, Start Num: 7
Candidate Starts for Orla_26:
(Start: 7 @19998 has 8 MA's), (12, 20022), (23, 20076), (36, 20145), (38, 20151), (45, 20175), (56, 20259), (63, 20310), (66, 20331), (69, 20352), (77, 20400), (78, 20403),

Gene: Phauci_36 Start: 35454, Stop: 35912, Start Num: 5
Candidate Starts for Phauci_36:
(Start: 5 @35454 has 57 MA's), (22, 35532), (25, 35553), (27, 35562), (28, 35568), (48, 35664),

Gene: Phinally_43 Start: 38601, Stop: 39059, Start Num: 5
Candidate Starts for Phinally_43:
(Start: 5 @38601 has 57 MA's), (22, 38679), (28, 38715), (29, 38721), (34, 38760), (42, 38790), (48, 38811), (55, 38859),

Gene: PhorbesPhlower_23 Start: 18982, Stop: 19440, Start Num: 5
Candidate Starts for PhorbesPhlower_23:
(Start: 5 @18982 has 57 MA's), (18, 19045), (25, 19081), (28, 19096), (33, 19129), (39, 19159), (41, 19165), (45, 19180), (55, 19240), (69, 19339), (74, 19378),

Gene: PhriskyACE_23 Start: 20203, Stop: 20682, Start Num: 5
Candidate Starts for PhriskyACE_23:
(Start: 5 @20203 has 57 MA's), (9, 20218), (17, 20263), (20, 20275), (25, 20302), (28, 20317), (29, 20323), (39, 20380), (40, 20383), (41, 20386), (42, 20392), (67, 20569), (74, 20620),

Gene: PhrostedPhlake_26 Start: 21393, Stop: 21851, Start Num: 5
Candidate Starts for PhrostedPhlake_26:
(Start: 5 @21393 has 57 MA's), (18, 21456), (25, 21492), (28, 21507), (29, 21513), (33, 21540), (39, 21570), (42, 21582), (45, 21591), (55, 21651), (67, 21738), (68, 21744),

Gene: Pipp_24 Start: 20694, Stop: 21152, Start Num: 5
Candidate Starts for Pipp_24:
(Start: 5 @20694 has 57 MA's), (18, 20757), (25, 20793), (28, 20808), (29, 20814), (33, 20841), (39, 20871), (42, 20883), (45, 20892), (55, 20952), (68, 21045),

Gene: Posh_27 Start: 22293, Stop: 22751, Start Num: 5
Candidate Starts for Posh_27:
(Start: 5 @22293 has 57 MA's), (17, 22353), (22, 22371), (28, 22407), (29, 22413), (32, 22437), (33, 22440), (34, 22452), (37, 22464), (42, 22482), (43, 22485), (44, 22488), (46, 22494), (55, 22551), (68, 22644), (69, 22650),

Gene: Pytheas_27 Start: 22439, Stop: 22897, Start Num: 5
Candidate Starts for Pytheas_27:
(Start: 5 @22439 has 57 MA's), (17, 22499), (22, 22517), (28, 22553), (29, 22559), (32, 22583), (33, 22586), (34, 22598), (37, 22610), (42, 22628), (43, 22631), (44, 22634), (46, 22640), (55, 22697), (68, 22790), (69, 22796),

Gene: RanchParmCat_27 Start: 19763, Stop: 20167, Start Num: 15
Candidate Starts for RanchParmCat_27:
(1, 19619), (2, 19676), (3, 19694), (Start: 7 @19721 has 8 MA's), (13, 19754), (15, 19763), (33, 19856), (35, 19865), (37, 19874), (39, 19880), (51, 19922), (53, 19943), (56, 19985), (58, 20012), (62, 20030), (71, 20084),

Gene: RiverRaider_45 Start: 38134, Stop: 38592, Start Num: 5
Candidate Starts for RiverRaider_45:
(Start: 5 @38134 has 57 MA's), (13, 38173), (22, 38212), (28, 38248), (32, 38278), (42, 38323), (48, 38344), (73, 38527),

Gene: Samba_24 Start: 20778, Stop: 21236, Start Num: 5
Candidate Starts for Samba_24:
(Start: 5 @20778 has 57 MA's), (18, 20841), (25, 20877), (28, 20892), (29, 20898), (33, 20925), (39, 20955), (42, 20967), (45, 20976), (55, 21036), (67, 21123), (68, 21129),

Gene: Sedona_44 Start: 39952, Stop: 40410, Start Num: 5
Candidate Starts for Sedona_44:
(Start: 5 @39952 has 57 MA's), (22, 40030), (28, 40066), (29, 40072), (34, 40111), (48, 40162), (67, 40297),

Gene: Trine_23 Start: 18593, Stop: 19054, Start Num: 5
Candidate Starts for Trine_23:
(4, 18590), (Start: 5 @18593 has 57 MA's), (18, 18656), (20, 18665), (25, 18692), (27, 18701), (42, 18782), (45, 18791), (47, 18800),

Gene: UmaThurman_24 Start: 20825, Stop: 21283, Start Num: 5
Candidate Starts for UmaThurman_24:
(Start: 5 @20825 has 57 MA's), (18, 20888), (25, 20924), (28, 20939), (29, 20945), (33, 20972), (39, 21002), (42, 21014), (45, 21023), (55, 21083), (67, 21170), (68, 21176),

Gene: Utz_24 Start: 20695, Stop: 21153, Start Num: 5
Candidate Starts for Utz_24:
(Start: 5 @20695 has 57 MA's), (18, 20758), (25, 20794), (28, 20809), (29, 20815), (33, 20842), (39, 20872), (42, 20884), (45, 20893), (55, 20953), (67, 21040), (68, 21046),

Gene: Walrus_26 Start: 21240, Stop: 21698, Start Num: 5
Candidate Starts for Walrus_26:
(Start: 5 @21240 has 57 MA's), (18, 21303), (25, 21339), (28, 21354), (29, 21360), (33, 21387), (39, 21417), (42, 21429), (45, 21438), (55, 21498), (67, 21585), (68, 21591),

Gene: Wisp_23 Start: 20410, Stop: 20868, Start Num: 5
Candidate Starts for Wisp_23:
(Start: 5 @20410 has 57 MA's), (18, 20473), (25, 20509), (28, 20524), (29, 20530), (33, 20557), (39, 20587), (42, 20599), (45, 20608), (55, 20668), (67, 20755), (68, 20761),

Gene: Wrigley_27 Start: 22190, Stop: 22648, Start Num: 5
Candidate Starts for Wrigley_27:
(Start: 5 @22190 has 57 MA's), (17, 22250), (22, 22268), (28, 22304), (29, 22310), (32, 22334), (33, 22337), (34, 22349), (37, 22361), (42, 22379), (43, 22382), (44, 22385), (46, 22391), (55, 22448), (68, 22541), (69, 22547),

Gene: Yakult_25 Start: 19569, Stop: 20021, Start Num: 7
Candidate Starts for Yakult_25:
(1, 19473), (2, 19530), (4, 19560), (Start: 5 @19563 has 57 MA's), (Start: 7 @19569 has 8 MA's), (10, 19584), (12, 19593), (13, 19602), (30, 19689), (33, 19707), (38, 19728), (46, 19755), (50, 19770), (58, 19863), (61, 19878), (62, 19881), (77, 19977),

Gene: Zarbodnamra_24 Start: 20699, Stop: 21157, Start Num: 5
Candidate Starts for Zarbodnamra_24:
(Start: 5 @20699 has 57 MA's), (18, 20762), (25, 20798), (28, 20813), (29, 20819), (33, 20846), (39, 20876), (42, 20888), (45, 20897), (55, 20957), (67, 21044), (68, 21050),