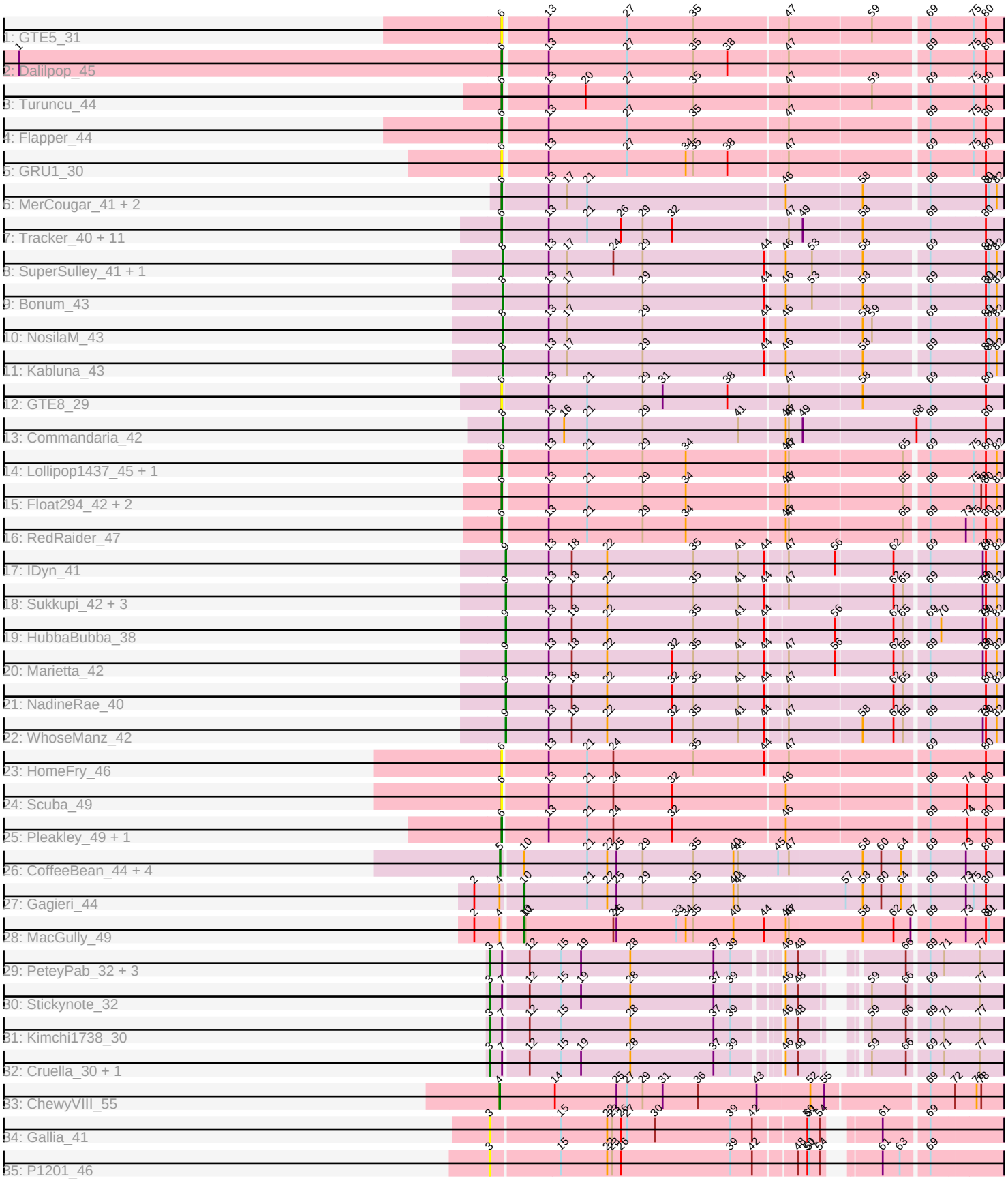
Pham 294729


1: GTE5_31
2: Dalilpop_45
3: Turuncu_44
4: Flapper_44
5: GRU1_30
6: MerCougar_41 + 2
7: Tracker_40 + 11
8: SuperSulley_41 + 1
9: Bonum_43
10: NosilaM_43
11: Kabluna_43
12: GTE8_29
13: Commandaria_42
14: Lollipop1437_45 + 1
15: Float294_42 + 2
16: RedRaider_47
17: IDyn_41
18: Sukkupi_42 + 3
19: HubbaBubba_38
20: Marietta_42
21: NadineRae_40
22: WhoseManz_42
23: HomeFry_46
24: Scuba_49
25: Pleakley_49 + 1
26: CoffeeBean_44 + 4
27: Gagieri_44
28: MacGully_49
29: PeteyPab_32 + 3
30: Stickynote_32
31: Kimchi1738_30
32: Cruella_30 + 1
33: ChewyVIII_55
34: Gallia_41
35: P1201_46

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 294729 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294729 has 64 members, 8 are drafts.

Phages represented in each track:
- Track 1 : GTE5_31
- Track 2 : Dalilpop_45
- Track 3 : Turuncu_44
- Track 4 : Flapper_44
- Track 5 : GRU1_30
- Track 6 : MerCougar_41, StarStruck_41, Outis_41
- Track 7 : Tracker_40, Arti_40, Foxboro_41, Emianna_40, Kurt_40, NatB6_40, Jifall16_39, Phomeo_39, GrootJr_42, KidneyBean_40, Wheezy_40, NovumRegina_40
- Track 8 : SuperSulley_41, Buggaboo_41
- Track 9 : Bonum_43
- Track 10 : NosilaM_43
- Track 11 : Kabluna_43
- Track 12 : GTE8_29
- Track 13 : Commandaria_42
- Track 14 : Lollipop1437_45, Ennea_46
- Track 15 : Float294_42, Patio_43, Skysand_42
- Track 16 : RedRaider_47
- Track 17 : IDyn_41
- Track 18 : Sukkupi_42, Yndexa_42, BiPauneto_43, Pemberton_44
- Track 19 : HubbaBubba_38
- Track 20 : Marietta_42
- Track 21 : NadineRae_40
- Track 22 : WhoseManz_42
- Track 23 : HomeFry_46
- Track 24 : Scuba_49
- Track 25 : Pleakley_49, Fury_49
- Track 26 : CoffeeBean_44, Braxoaddie_44, Apiary_44, Polyyuki_44, Maselop_44
- Track 27 : Gagieri_44
- Track 28 : MacGully_49
- Track 29 : PeteyPab_32, Zion_33, PotatoChip_33, Darwin_33
- Track 30 : Stickynote_32
- Track 31 : Kimchi1738_30
- Track 32 : Cruella_30, C3PO_30
- Track 33 : ChewyVIII_55
- Track 34 : Gallia_41
- Track 35 : P1201_46

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

The start number called the most often in the published annotations is 6, it was called in 26 of the 56 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Arti_40, Dalilpop_45, Emianna_40, Ennea_46, Flapper_44, Float294_42, Foxboro_41, Fury_49, GRU1_30, GTE5_31, GTE8_29, GrootJr_42, HomeFry_46, Jifall16_39, KidneyBean_40, Kurt_40, Lollipop1437_45, MerCougar_41, NatB6_40, NovumRegina_40, Outis_41, Patio_43, Phomeo_39, Pleakley_49, RedRaider_47, Scuba_49, Skysand_42, StarStruck_41, Tracker_40, Turuncu_44, Wheezy_40,

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

Genes that do not have the "Most Annotated" start:
• Apiary_44, BiPauneto_43, Bonum_43, Braxoaddie_44, Buggaboo_41, C3PO_30, ChewyVIII_55, CoffeeBean_44, Commandaria_42, Cruella_30, Darwin_33, Gagieri_44, Gallia_41, HubbaBubba_38, IDyn_41, Kabluna_43, Kimchi1738_30, MacGully_49, Marietta_42, Maselop_44, NadineRae_40, NosilaM_43, P1201_46, Pemberton_44, PeteyPab_32, Polyyuki_44, PotatoChip_33, Stickynote_32, Sukkupi_42, SuperSulley_41, WhoseManz_42, Yndexa_42, Zion_33,

Summary by start number:

Start 3:
• Found in 10 of 64 (15.6%) of genes in pham
• Manual Annotations of this start: 8 of 56
• Called 100.0% of time when present
• Phage (with cluster) where this start called: C3PO_30 (EN), Cruella_30 (EN), Darwin_33 (EN), Gallia_41 (singleton), Kimchi1738_30 (EN), P1201_46 (singleton), PeteyPab_32 (EN), PotatoChip_33 (EN), Stickynote_32 (EN), Zion_33 (EN),

Start 4:
• Found in 3 of 64 (4.7%) of genes in pham
• Manual Annotations of this start: 1 of 56
• Called 33.3% of time when present
• Phage (with cluster) where this start called: ChewyVIII_55 (singleton),

Start 5:
• Found in 5 of 64 (7.8%) of genes in pham
• Manual Annotations of this start: 5 of 56
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Apiary_44 (CR6), Braxoaddie_44 (CR6), CoffeeBean_44 (CR6), Maselop_44 (CR6), Polyyuki_44 (CR6),

Start 6:
• Found in 31 of 64 (48.4%) of genes in pham
• Manual Annotations of this start: 26 of 56

• Called 100.0% of time when present
• Phage (with cluster) where this start called: Arti_40 (CR2), Dalilpop_45 (CR1), Emianna_40 (CR2), Ennea_46 (CR3), Flapper_44 (CR1), Float294_42 (CR3), Foxboro_41 (CR2), Fury_49 (CR5), GRU1_30 (CR1), GTE5_31 (CR1), GTE8_29 (CR2), GrootJr_42 (CR2), HomeFry_46 (CR5), Jifall16_39 (CR2), KidneyBean_40 (CR2), Kurt_40 (CR2), Lollipop1437_45 (CR3), MerCougar_41 (CR2), NatB6_40 (CR2), NovumRegina_40 (CR2), Outis_41 (CR2), Patio_43 (CR3), Phomeo_39 (CR2), Pleakley_49 (CR5), RedRaider_47 (CR3), Scuba_49 (CR5), Skysand_42 (CR3), StarStruck_41 (CR2), Tracker_40 (CR2), Turuncu_44 (CR1), Wheezy_40 (CR2),

Start 8:
• Found in 6 of 64 (9.4%) of genes in pham
• Manual Annotations of this start: 6 of 56
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Bonum_43 (CR2), Buggaboo_41 (CR2), Commandaria_42 (CR2), Kabluna_43 (CR2), NosilaM_43 (CR2), SuperSulley_41 (CR2),

Start 9:
• Found in 9 of 64 (14.1%) of genes in pham
• Manual Annotations of this start: 8 of 56
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BiPauneto_43 (CR4), HubbaBubba_38 (CR4), IDyn_41 (CR4), Marietta_42 (CR4), NadineRae_40 (CR4), Pemberton_44 (CR4), Sukkupi_42 (CR4), WhoseManz_42 (CR4), Yndexa_42 (CR4),

Start 10:
• Found in 7 of 64 (10.9%) of genes in pham
• Manual Annotations of this start: 2 of 56
• Called 28.6% of time when present
• Phage (with cluster) where this start called: Gagieri_44 (CR6), MacGully_49 (CR7),

Summary by clusters:

There are 9 clusters represented in this pham: CR2, CR3, singleton, EN, CR6, CR7, CR4, CR5, CR1,

Info for manual annotations of cluster CR1:
•Start number 6 was manually annotated 3 times for cluster CR1.

Info for manual annotations of cluster CR2:
•Start number 6 was manually annotated 15 times for cluster CR2.
•Start number 8 was manually annotated 6 times for cluster CR2.

Info for manual annotations of cluster CR3:
•Start number 6 was manually annotated 6 times for cluster CR3.

Info for manual annotations of cluster CR4:
•Start number 9 was manually annotated 8 times for cluster CR4.

Info for manual annotations of cluster CR5:
•Start number 6 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CR6:
•Start number 5 was manually annotated 5 times for cluster CR6.
•Start number 10 was manually annotated 1 time for cluster CR6.

Info for manual annotations of cluster CR7:
•Start number 10 was manually annotated 1 time for cluster CR7.

Info for manual annotations of cluster EN:
•Start number 3 was manually annotated 8 times for cluster EN.

Gene Information:

Gene: Apiary_44 Start: 30416, Stop: 31342, Start Num: 5
Candidate Starts for Apiary_44:
(Start: 5 @30416 has 5 MA's), (Start: 10 @30452 has 2 MA's), (21, 30569), (22, 30608), (25, 30626), (29, 30677), (35, 30776), (40, 30851), (41, 30860), (45, 30935), (47, 30956), (58, 31094), (60, 31130), (64, 31169), (69, 31211), (73, 31274), (80, 31307),

Gene: Arti_40 Start: 28866, Stop: 29807, Start Num: 6
Candidate Starts for Arti_40:
(Start: 6 @28866 has 26 MA's), (13, 28953), (21, 29028), (26, 29094), (29, 29136), (32, 29193), (47, 29406), (49, 29433), (58, 29544), (69, 29676), (80, 29772),

Gene: BiPauneto_43 Start: 28641, Stop: 29561, Start Num: 9
Candidate Starts for BiPauneto_43:
(Start: 9 @28641 has 8 MA's), (13, 28722), (18, 28767), (22, 28836), (35, 29004), (41, 29088), (44, 29139), (47, 29172), (62, 29370), (65, 29388), (69, 29430), (79, 29520), (80, 29526), (82, 29547),

Gene: Bonum_43 Start: 29225, Stop: 30142, Start Num: 8
Candidate Starts for Bonum_43:
(Start: 8 @29225 has 6 MA's), (13, 29306), (17, 29342), (29, 29489), (44, 29723), (46, 29750), (53, 29801), (58, 29894), (69, 30011), (80, 30107), (81, 30113), (82, 30128),

Gene: Braxoaddie_44 Start: 30405, Stop: 31331, Start Num: 5
Candidate Starts for Braxoaddie_44:
(Start: 5 @30405 has 5 MA's), (Start: 10 @30441 has 2 MA's), (21, 30558), (22, 30597), (25, 30615), (29, 30666), (35, 30765), (40, 30840), (41, 30849), (45, 30924), (47, 30945), (58, 31083), (60, 31119), (64, 31158), (69, 31200), (73, 31263), (80, 31296),

Gene: Buggaboo_41 Start: 29704, Stop: 30621, Start Num: 8
Candidate Starts for Buggaboo_41:
(Start: 8 @29704 has 6 MA's), (13, 29785), (17, 29821), (24, 29911), (29, 29968), (44, 30202), (46, 30229), (53, 30280), (58, 30373), (69, 30490), (80, 30586), (81, 30592), (82, 30607),

Gene: C3PO_30 Start: 27616, Stop: 28482, Start Num: 3
Candidate Starts for C3PO_30:
(Start: 3 @27616 has 8 MA's), (7, 27640), (12, 27685), (15, 27745), (19, 27784), (28, 27880), (37, 28042), (39, 28075), (46, 28150), (48, 28174), (59, 28249), (66, 28315), (69, 28351), (71, 28378), (77, 28435),

Gene: ChewyVIII_55 Start: 37234, Stop: 38175, Start Num: 4
Candidate Starts for ChewyVIII_55:
(Start: 4 @37234 has 1 MA's), (14, 37336), (25, 37456), (27, 37477), (29, 37507), (31, 37546), (36, 37612), (43, 37726), (52, 37828), (55, 37855), (69, 38038), (72, 38086), (76, 38125), (78, 38131),

Gene: CoffeeBean_44 Start: 30363, Stop: 31289, Start Num: 5
Candidate Starts for CoffeeBean_44:
(Start: 5 @30363 has 5 MA's), (Start: 10 @30399 has 2 MA's), (21, 30516), (22, 30555), (25, 30573), (29, 30624), (35, 30723), (40, 30798), (41, 30807), (45, 30882), (47, 30903), (58, 31041), (60, 31077), (64, 31116), (69, 31158), (73, 31221), (80, 31254),

Gene: Commandaria_42 Start: 30197, Stop: 31138, Start Num: 8
Candidate Starts for Commandaria_42:
(Start: 8 @30197 has 6 MA's), (13, 30284), (16, 30314), (21, 30359), (29, 30467), (41, 30650), (46, 30731), (47, 30737), (49, 30764), (68, 30980), (69, 31007), (80, 31103),

Gene: Cruella_30 Start: 27616, Stop: 28482, Start Num: 3
Candidate Starts for Cruella_30:
(Start: 3 @27616 has 8 MA's), (7, 27640), (12, 27685), (15, 27745), (19, 27784), (28, 27880), (37, 28042), (39, 28075), (46, 28150), (48, 28174), (59, 28249), (66, 28315), (69, 28351), (71, 28378), (77, 28435),

Gene: Dalilpop_45 Start: 31200, Stop: 32117, Start Num: 6
Candidate Starts for Dalilpop_45:
(1, 30261), (Start: 6 @31200 has 26 MA's), (13, 31278), (27, 31431), (35, 31560), (38, 31623), (47, 31731), (69, 31986), (75, 32061), (80, 32082),

Gene: Darwin_33 Start: 27301, Stop: 28167, Start Num: 3
Candidate Starts for Darwin_33:
(Start: 3 @27301 has 8 MA's), (7, 27325), (12, 27370), (15, 27430), (19, 27469), (28, 27565), (37, 27727), (39, 27760), (46, 27835), (48, 27859), (66, 28000), (69, 28036), (71, 28063), (77, 28120),

Gene: Emianna_40 Start: 29879, Stop: 30820, Start Num: 6
Candidate Starts for Emianna_40:
(Start: 6 @29879 has 26 MA's), (13, 29966), (21, 30041), (26, 30107), (29, 30149), (32, 30206), (47, 30419), (49, 30446), (58, 30557), (69, 30689), (80, 30785),

Gene: Ennea_46 Start: 30548, Stop: 31465, Start Num: 6
Candidate Starts for Ennea_46:
(Start: 6 @30548 has 26 MA's), (13, 30626), (21, 30701), (29, 30809), (34, 30893), (46, 31073), (47, 31079), (65, 31295), (69, 31334), (75, 31409), (80, 31430), (82, 31451),

Gene: Flapper_44 Start: 30267, Stop: 31184, Start Num: 6
Candidate Starts for Flapper_44:
(Start: 6 @30267 has 26 MA's), (13, 30345), (27, 30498), (35, 30627), (47, 30798), (69, 31053), (75, 31128), (80, 31149),

Gene: Float294_42 Start: 29990, Stop: 30907, Start Num: 6
Candidate Starts for Float294_42:
(Start: 6 @29990 has 26 MA's), (13, 30068), (21, 30143), (29, 30251), (34, 30335), (46, 30515), (47, 30521), (65, 30737), (69, 30776), (75, 30851), (78, 30863), (80, 30872), (82, 30893),

Gene: Foxboro_41 Start: 30385, Stop: 31326, Start Num: 6

Candidate Starts for Foxboro_41:
(Start: 6 @30385 has 26 MA's), (13, 30472), (21, 30547), (26, 30613), (29, 30655), (32, 30712), (47, 30925), (49, 30952), (58, 31063), (69, 31195), (80, 31291),

Gene: Fury_49 Start: 29757, Stop: 30677, Start Num: 6
Candidate Starts for Fury_49:
(Start: 6 @29757 has 26 MA's), (13, 29838), (21, 29913), (24, 29964), (32, 30078), (46, 30285), (69, 30546), (74, 30609), (80, 30642),

Gene: GRU1_30 Start: 22167, Stop: 23084, Start Num: 6
Candidate Starts for GRU1_30:
(Start: 6 @22167 has 26 MA's), (13, 22245), (27, 22398), (34, 22512), (35, 22527), (38, 22590), (47, 22698), (69, 22953), (75, 23028), (80, 23049),

Gene: GTE5_31 Start: 23122, Stop: 24039, Start Num: 6
Candidate Starts for GTE5_31:
(Start: 6 @23122 has 26 MA's), (13, 23200), (27, 23353), (35, 23482), (47, 23653), (59, 23809), (69, 23908), (75, 23983), (80, 24004),

Gene: GTE8_29 Start: 23138, Stop: 24079, Start Num: 6
Candidate Starts for GTE8_29:
(Start: 6 @23138 has 26 MA's), (13, 23225), (21, 23300), (29, 23408), (31, 23447), (38, 23570), (47, 23678), (58, 23816), (69, 23948), (80, 24044),

Gene: Gagieri_44 Start: 30280, Stop: 31170, Start Num: 10
Candidate Starts for Gagieri_44:
(2, 30193), (Start: 4 @30241 has 1 MA's), (Start: 10 @30280 has 2 MA's), (21, 30397), (22, 30436), (25, 30454), (29, 30505), (35, 30604), (40, 30679), (41, 30688), (57, 30892), (58, 30922), (60, 30958), (64, 30997), (69, 31039), (73, 31102), (75, 31114), (80, 31135),

Gene: Gallia_41 Start: 33872, Stop: 34774, Start Num: 3
Candidate Starts for Gallia_41:
(Start: 3 @33872 has 8 MA's), (15, 34001), (22, 34091), (23, 34100), (26, 34118), (27, 34130), (30, 34184), (39, 34331), (42, 34373), (50, 34466), (51, 34469), (54, 34490), (61, 34562), (69, 34643),

Gene: GrootJr_42 Start: 29261, Stop: 30202, Start Num: 6
Candidate Starts for GrootJr_42:
(Start: 6 @29261 has 26 MA's), (13, 29348), (21, 29423), (26, 29489), (29, 29531), (32, 29588), (47, 29801), (49, 29828), (58, 29939), (69, 30071), (80, 30167),

Gene: HomeFry_46 Start: 28359, Stop: 29288, Start Num: 6
Candidate Starts for HomeFry_46:
(Start: 6 @28359 has 26 MA's), (13, 28440), (21, 28515), (24, 28566), (35, 28722), (44, 28857), (47, 28896), (69, 29151), (80, 29253),

Gene: HubbaBubba_38 Start: 25653, Stop: 26573, Start Num: 9
Candidate Starts for HubbaBubba_38:
(Start: 9 @25653 has 8 MA's), (13, 25734), (18, 25779), (22, 25848), (35, 26016), (41, 26100), (44, 26151), (56, 26274), (62, 26382), (65, 26400), (69, 26442), (70, 26463), (79, 26532), (80, 26538), (82, 26559),

Gene: IDyn_41 Start: 27049, Stop: 27969, Start Num: 9
Candidate Starts for IDyn_41:

(Start: 9 @27049 has 8 MA's), (13, 27130), (18, 27175), (22, 27244), (35, 27412), (41, 27496), (44, 27547), (47, 27580), (56, 27670), (62, 27778), (69, 27838), (79, 27928), (80, 27934), (82, 27955),

Gene: Jifall16_39 Start: 29533, Stop: 30474, Start Num: 6
Candidate Starts for Jifall16_39:
(Start: 6 @29533 has 26 MA's), (13, 29620), (21, 29695), (26, 29761), (29, 29803), (32, 29860), (47, 30073), (49, 30100), (58, 30211), (69, 30343), (80, 30439),

Gene: Kabluna_43 Start: 28640, Stop: 29557, Start Num: 8
Candidate Starts for Kabluna_43:
(Start: 8 @28640 has 6 MA's), (13, 28721), (17, 28757), (29, 28904), (44, 29138), (46, 29165), (58, 29309), (69, 29426), (80, 29522), (81, 29528), (82, 29543),

Gene: KidneyBean_40 Start: 29657, Stop: 30598, Start Num: 6
Candidate Starts for KidneyBean_40:
(Start: 6 @29657 has 26 MA's), (13, 29744), (21, 29819), (26, 29885), (29, 29927), (32, 29984), (47, 30197), (49, 30224), (58, 30335), (69, 30467), (80, 30563),

Gene: Kimchi1738_30 Start: 26704, Stop: 27570, Start Num: 3
Candidate Starts for Kimchi1738_30:
(Start: 3 @26704 has 8 MA's), (7, 26728), (12, 26773), (15, 26833), (28, 26968), (37, 27130), (39, 27163), (46, 27238), (48, 27262), (59, 27337), (66, 27403), (69, 27439), (71, 27466), (77, 27523),

Gene: Kurt_40 Start: 29894, Stop: 30835, Start Num: 6
Candidate Starts for Kurt_40:
(Start: 6 @29894 has 26 MA's), (13, 29981), (21, 30056), (26, 30122), (29, 30164), (32, 30221), (47, 30434), (49, 30461), (58, 30572), (69, 30704), (80, 30800),

Gene: Lollipop1437_45 Start: 30536, Stop: 31453, Start Num: 6
Candidate Starts for Lollipop1437_45:
(Start: 6 @30536 has 26 MA's), (13, 30614), (21, 30689), (29, 30797), (34, 30881), (46, 31061), (47, 31067), (65, 31283), (69, 31322), (75, 31397), (80, 31418), (82, 31439),

Gene: MacGully_49 Start: 30719, Stop: 31612, Start Num: 10
Candidate Starts for MacGully_49:
(2, 30635), (Start: 4 @30683 has 1 MA's), (Start: 10 @30719 has 2 MA's), (11, 30722), (24, 30890), (25, 30896), (33, 31013), (34, 31031), (35, 31046), (40, 31121), (44, 31181), (46, 31220), (47, 31226), (58, 31364), (62, 31424), (67, 31457), (69, 31481), (73, 31544), (80, 31577), (81, 31583),

Gene: Marietta_42 Start: 26965, Stop: 27885, Start Num: 9
Candidate Starts for Marietta_42:
(Start: 9 @26965 has 8 MA's), (13, 27046), (18, 27091), (22, 27160), (32, 27286), (35, 27328), (41, 27412), (44, 27463), (47, 27496), (56, 27586), (62, 27694), (65, 27712), (69, 27754), (79, 27844), (80, 27850), (82, 27871),

Gene: Maselop_44 Start: 30439, Stop: 31365, Start Num: 5
Candidate Starts for Maselop_44:
(Start: 5 @30439 has 5 MA's), (Start: 10 @30475 has 2 MA's), (21, 30592), (22, 30631), (25, 30649), (29, 30700), (35, 30799), (40, 30874), (41, 30883), (45, 30958), (47, 30979), (58, 31117), (60, 31153), (64, 31192), (69, 31234), (73, 31297), (80, 31330),

Gene: MerCougar_41 Start: 29816, Stop: 30739, Start Num: 6
Candidate Starts for MerCougar_41:

(Start: 6 @29816 has 26 MA's), (13, 29903), (17, 29939), (21, 29978), (46, 30347), (58, 30491), (69, 30608), (80, 30704), (81, 30710), (82, 30725),

Gene: NadineRae_40 Start: 26218, Stop: 27138, Start Num: 9
Candidate Starts for NadineRae_40:
(Start: 9 @26218 has 8 MA's), (13, 26299), (18, 26344), (22, 26413), (32, 26539), (35, 26581), (41, 26665), (44, 26716), (47, 26749), (62, 26947), (65, 26965), (69, 27007), (80, 27103), (82, 27124),

Gene: NatB6_40 Start: 28930, Stop: 29871, Start Num: 6
Candidate Starts for NatB6_40:
(Start: 6 @28930 has 26 MA's), (13, 29017), (21, 29092), (26, 29158), (29, 29200), (32, 29257), (47, 29470), (49, 29497), (58, 29608), (69, 29740), (80, 29836),

Gene: NosilaM_43 Start: 29537, Stop: 30454, Start Num: 8
Candidate Starts for NosilaM_43:
(Start: 8 @29537 has 6 MA's), (13, 29618), (17, 29654), (29, 29801), (44, 30035), (46, 30062), (58, 30206), (59, 30224), (69, 30323), (80, 30419), (81, 30425), (82, 30440),

Gene: NovumRegina_40 Start: 29260, Stop: 30201, Start Num: 6
Candidate Starts for NovumRegina_40:
(Start: 6 @29260 has 26 MA's), (13, 29347), (21, 29422), (26, 29488), (29, 29530), (32, 29587), (47, 29800), (49, 29827), (58, 29938), (69, 30070), (80, 30166),

Gene: Outis_41 Start: 29510, Stop: 30433, Start Num: 6
Candidate Starts for Outis_41:
(Start: 6 @29510 has 26 MA's), (13, 29597), (17, 29633), (21, 29672), (46, 30041), (58, 30185), (69, 30302), (80, 30398), (81, 30404), (82, 30419),

Gene: P1201_46 Start: 33556, Stop: 34458, Start Num: 3
Candidate Starts for P1201_46:
(Start: 3 @33556 has 8 MA's), (15, 33685), (22, 33775), (23, 33784), (26, 33802), (39, 34015), (42, 34057), (48, 34132), (50, 34150), (51, 34153), (54, 34174), (61, 34246), (63, 34279), (69, 34327),

Gene: Patio_43 Start: 29772, Stop: 30689, Start Num: 6
Candidate Starts for Patio_43:
(Start: 6 @29772 has 26 MA's), (13, 29850), (21, 29925), (29, 30033), (34, 30117), (46, 30297), (47, 30303), (65, 30519), (69, 30558), (75, 30633), (78, 30645), (80, 30654), (82, 30675),

Gene: Pemberton_44 Start: 26958, Stop: 27878, Start Num: 9
Candidate Starts for Pemberton_44:
(Start: 9 @26958 has 8 MA's), (13, 27039), (18, 27084), (22, 27153), (35, 27321), (41, 27405), (44, 27456), (47, 27489), (62, 27687), (65, 27705), (69, 27747), (79, 27837), (80, 27843), (82, 27864),

Gene: PeteyPab_32 Start: 28461, Stop: 29327, Start Num: 3
Candidate Starts for PeteyPab_32:
(Start: 3 @28461 has 8 MA's), (7, 28485), (12, 28530), (15, 28590), (19, 28629), (28, 28725), (37, 28887), (39, 28920), (46, 28995), (48, 29019), (66, 29160), (69, 29196), (71, 29223), (77, 29280),

Gene: Phomeo_39 Start: 29529, Stop: 30470, Start Num: 6
Candidate Starts for Phomeo_39:
(Start: 6 @29529 has 26 MA's), (13, 29616), (21, 29691), (26, 29757), (29, 29799), (32, 29856), (47, 30069), (49, 30096), (58, 30207), (69, 30339), (80, 30435),

Gene: Pleakley_49 Start: 29758, Stop: 30678, Start Num: 6
Candidate Starts for Pleakley_49:
(Start: 6 @29758 has 26 MA's), (13, 29839), (21, 29914), (24, 29965), (32, 30079), (46, 30286), (69, 30547), (74, 30610), (80, 30643),

Gene: Polyyuki_44 Start: 30428, Stop: 31354, Start Num: 5
Candidate Starts for Polyyuki_44:
(Start: 5 @30428 has 5 MA's), (Start: 10 @30464 has 2 MA's), (21, 30581), (22, 30620), (25, 30638), (29, 30689), (35, 30788), (40, 30863), (41, 30872), (45, 30947), (47, 30968), (58, 31106), (60, 31142), (64, 31181), (69, 31223), (73, 31286), (80, 31319),

Gene: PotatoChip_33 Start: 28463, Stop: 29329, Start Num: 3
Candidate Starts for PotatoChip_33:
(Start: 3 @28463 has 8 MA's), (7, 28487), (12, 28532), (15, 28592), (19, 28631), (28, 28727), (37, 28889), (39, 28922), (46, 28997), (48, 29021), (66, 29162), (69, 29198), (71, 29225), (77, 29282),

Gene: RedRaider_47 Start: 31794, Stop: 32711, Start Num: 6
Candidate Starts for RedRaider_47:
(Start: 6 @31794 has 26 MA's), (13, 31872), (21, 31947), (29, 32055), (34, 32139), (46, 32319), (47, 32325), (65, 32541), (69, 32580), (73, 32643), (75, 32655), (80, 32676), (82, 32697),

Gene: Scuba_49 Start: 29835, Stop: 30755, Start Num: 6
Candidate Starts for Scuba_49:
(Start: 6 @29835 has 26 MA's), (13, 29916), (21, 29991), (24, 30042), (32, 30156), (46, 30363), (69, 30624), (74, 30687), (80, 30720),

Gene: Skysand_42 Start: 29992, Stop: 30909, Start Num: 6
Candidate Starts for Skysand_42:
(Start: 6 @29992 has 26 MA's), (13, 30070), (21, 30145), (29, 30253), (34, 30337), (46, 30517), (47, 30523), (65, 30739), (69, 30778), (75, 30853), (78, 30865), (80, 30874), (82, 30895),

Gene: StarStruck_41 Start: 29510, Stop: 30433, Start Num: 6
Candidate Starts for StarStruck_41:
(Start: 6 @29510 has 26 MA's), (13, 29597), (17, 29633), (21, 29672), (46, 30041), (58, 30185), (69, 30302), (80, 30398), (81, 30404), (82, 30419),

Gene: Stickynote_32 Start: 27883, Stop: 28749, Start Num: 3
Candidate Starts for Stickynote_32:
(Start: 3 @27883 has 8 MA's), (7, 27907), (12, 27952), (15, 28012), (19, 28051), (28, 28147), (37, 28309), (39, 28342), (46, 28417), (48, 28441), (59, 28516), (66, 28582), (69, 28618), (77, 28702),

Gene: Sukkupi_42 Start: 28532, Stop: 29452, Start Num: 9
Candidate Starts for Sukkupi_42:
(Start: 9 @28532 has 8 MA's), (13, 28613), (18, 28658), (22, 28727), (35, 28895), (41, 28979), (44, 29030), (47, 29063), (62, 29261), (65, 29279), (69, 29321), (79, 29411), (80, 29417), (82, 29438),

Gene: SuperSulley_41 Start: 29704, Stop: 30621, Start Num: 8
Candidate Starts for SuperSulley_41:
(Start: 8 @29704 has 6 MA's), (13, 29785), (17, 29821), (24, 29911), (29, 29968), (44, 30202), (46, 30229), (53, 30280), (58, 30373), (69, 30490), (80, 30586), (81, 30592), (82, 30607),

Gene: Tracker_40 Start: 28657, Stop: 29598, Start Num: 6
Candidate Starts for Tracker_40:

(Start: 6 @28657 has 26 MA's), (13, 28744), (21, 28819), (26, 28885), (29, 28927), (32, 28984), (47, 29197), (49, 29224), (58, 29335), (69, 29467), (80, 29563),

Gene: Turuncu_44 Start: 29978, Stop: 30895, Start Num: 6
Candidate Starts for Turuncu_44:
(Start: 6 @29978 has 26 MA's), (13, 30056), (20, 30128), (27, 30209), (35, 30338), (47, 30509), (59, 30665), (69, 30764), (75, 30839), (80, 30860),

Gene: Wheezy_40 Start: 28862, Stop: 29803, Start Num: 6
Candidate Starts for Wheezy_40:
(Start: 6 @28862 has 26 MA's), (13, 28949), (21, 29024), (26, 29090), (29, 29132), (32, 29189), (47, 29402), (49, 29429), (58, 29540), (69, 29672), (80, 29768),

Gene: WhoseManz_42 Start: 26578, Stop: 27498, Start Num: 9
Candidate Starts for WhoseManz_42:
(Start: 9 @26578 has 8 MA's), (13, 26659), (18, 26704), (22, 26773), (32, 26899), (35, 26941), (41, 27025), (44, 27076), (47, 27109), (58, 27247), (62, 27307), (65, 27325), (69, 27367), (79, 27457), (80, 27463), (82, 27484),

Gene: Yndexa_42 Start: 28532, Stop: 29452, Start Num: 9
Candidate Starts for Yndexa_42:
(Start: 9 @28532 has 8 MA's), (13, 28613), (18, 28658), (22, 28727), (35, 28895), (41, 28979), (44, 29030), (47, 29063), (62, 29261), (65, 29279), (69, 29321), (79, 29411), (80, 29417), (82, 29438),

Gene: Zion_33 Start: 28461, Stop: 29327, Start Num: 3
Candidate Starts for Zion_33:
(Start: 3 @28461 has 8 MA's), (7, 28485), (12, 28530), (15, 28590), (19, 28629), (28, 28725), (37, 28887), (39, 28920), (46, 28995), (48, 29019), (66, 29160), (69, 29196), (71, 29223), (77, 29280),