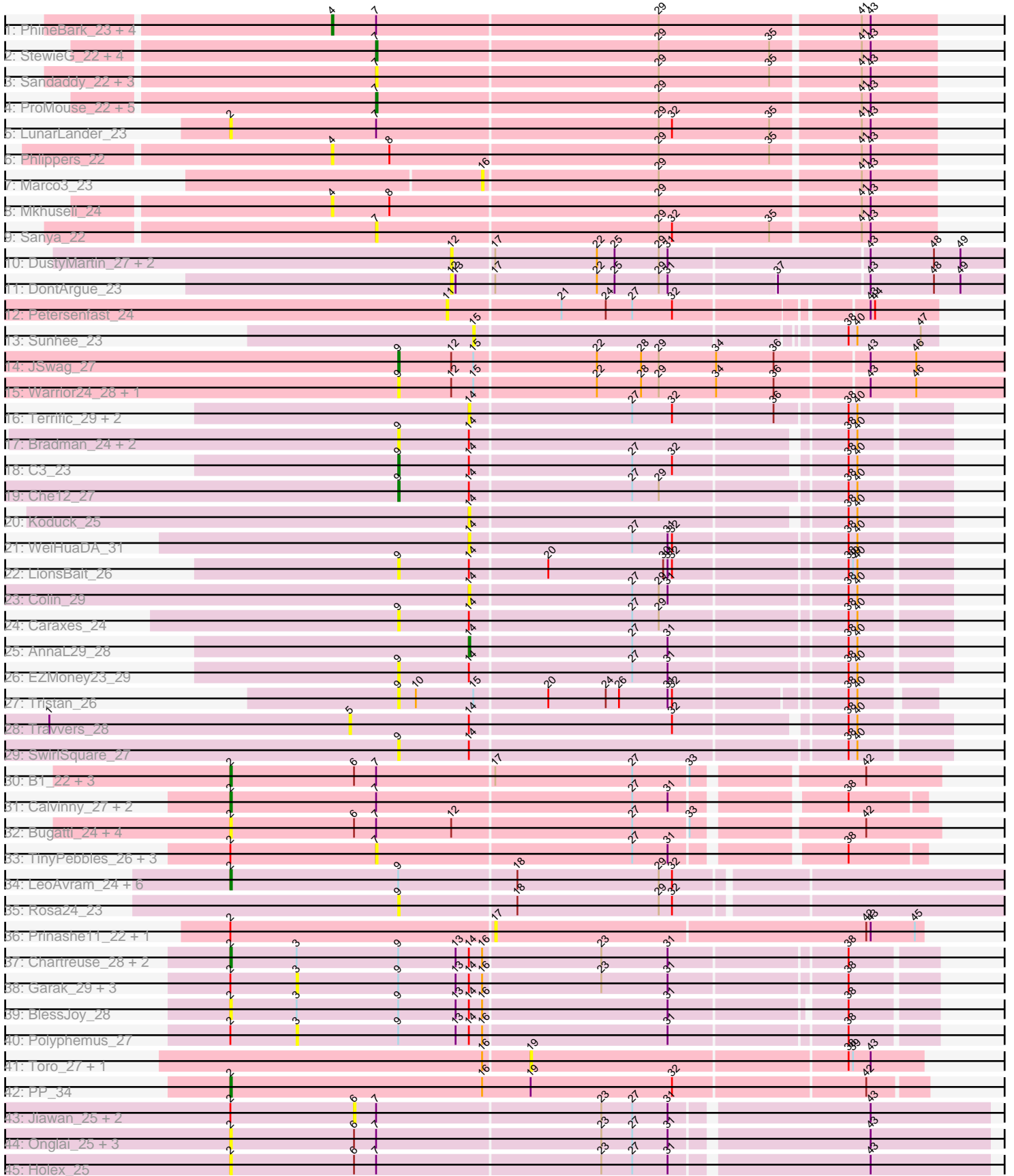


Pham 224465



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 224465 Report

This analysis was run 03/28/25 on database version 593.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 224465 has 98 members, 79 are drafts.

Phages represented in each track:

- Track 1 : PhineBark_23, EnzoK_23, Levia_22, McSinger_24, Bethlehem_23
- Track 2 : StewieG_22, BK1_21, Inyanga_22, A6_21, Iqorha_22
- Track 3 : Sandaddy_22, Bigchung_23, ShortQueendom_22, Teodoridan_21
- Track 4 : ProMouse_22, Aeneas_25, U2_23, BarrowTuph_22, GMonster_22, PhrostyMug_23
- Track 5 : LunarLander_23
- Track 6 : Phlippers_22
- Track 7 : Marco3_23
- Track 8 : Mkhusei_24
- Track 9 : Sanya_22
- Track 10 : DustyMartin_27, Rowdy_27, Shapes_27
- Track 11 : DontArgue_23
- Track 12 : Petersenfast_24
- Track 13 : Sunhee_23
- Track 14 : JSwag_27
- Track 15 : Warrior24_28, Oofda_28
- Track 16 : Terrific_29, Gratitude_26, Sknot_26
- Track 17 : Bradman_24, MajorMajor_24, Quokka_23
- Track 18 : C3_23
- Track 19 : Che12_27
- Track 20 : Koduck_25
- Track 21 : WeiHuaDA_31
- Track 22 : LionsBait_26
- Track 23 : Colin_29
- Track 24 : Caraxes_24
- Track 25 : AnnaL29_28
- Track 26 : EZMoney23_29
- Track 27 : Tristan_26
- Track 28 : Travvers_28
- Track 29 : SwirlSquare_27
- Track 30 : B1_22, Kachowdy_24, BabyJohn_23, Chiqui_23
- Track 31 : Calvinny_27, Anubis_28, Bxz2_25
- Track 32 : Bugatti_24, DropBear_24, Giroux_24, SaturnRing_24, Marchesa_24

- Track 33 : TinyPebbles_26, Lowa_26, Snickers_26, Bigflo_26
- Track 34 : LeoAvram_24, Kingmustik0402_24, SenorClean_23, Mayonnaise_24, Koan_23, NorthStar_24, Huxley_24
- Track 35 : Rosa24_23
- Track 36 : Prinashe11_22, Twigg_21
- Track 37 : Chartreuse_28, DaVinci_28, Kazan_28
- Track 38 : Garak_29, Helmet_29, Temprado_29, Candra_28
- Track 39 : BlessJoy_28
- Track 40 : Polyphemus_27
- Track 41 : Toro_27, FlyCatcher_28
- Track 42 : PP_34
- Track 43 : Jiawan_25, RyeScarlet_27, EdogawaKiddo_24
- Track 44 : Onglai_25, Lilleskat_24, Sachima_24, Hanray_25
- Track 45 : Horex_25

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

The start number called the most often in the published annotations is 2, it was called in 9 of the 19 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Anubis_28, B1_22, BabyJohn_23, BlessJoy_28, Bugatti_24, Bxz2_25, Calvinny_27, Chartreuse_28, Chiqui_23, DaVinci_28, DropBear_24, Giroux_24, Hanray_25, Horex_25, Huxley_24, Kachowdy_24, Kazan_28, Kingmustik0402_24, Koan_23, LeoAvram_24, Lilleskat_24, LunarLander_23, Marchesa_24, Mayonnaise_24, NorthStar_24, Onglai_25, PP_34, Sachima_24, SaturnRing_24, SenorClean_23,

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

- Bigflo_26, Candra_28, EdogawaKiddo_24, Garak_29, Helmet_29, Jiawan_25, Lowa_26, Polyphemus_27, Prinashe11_22, RyeScarlet_27, Snickers_26, Temprado_29, TinyPebbles_26, Twigg_21,

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

- A6_21, Aeneas_25, AnnaL29_28, BK1_21, BarrowTuph_22, Bethlehem_23, Bigchung_23, Bradman_24, C3_23, Caraxes_24, Che12_27, Colin_29, DontArgue_23, DustyMartin_27, EZMoney23_29, EnzoK_23, FlyCatcher_28, GMonster_22, Gratitude_26, Inyanga_22, Iqorha_22, JSwag_27, Koduck_25, Levia_22, LionsBait_26, MajorMajor_24, Marco3_23, McSinger_24, Mkhuseleli_24, Oofda_28, Petersenfast_24, PhineBark_23, Phlippers_22, PhrostyMug_23, ProMouse_22, Quokka_23, Rosa24_23, Rowdy_27, Sandaddy_22, Sanya_22, Shapes_27, ShortQueendom_22, Sknot_26, StewieG_22, Sunhee_23, SwirlSquare_27, Teodoridan_21, Terrific_29, Toro_27, Travvers_28, Tristan_26, U2_23, Warrior24_28, WeiHuaDA_31,

Summary by start number:

Start 2:

- Found in 44 of 98 (44.9%) of genes in pham
- Manual Annotations of this start: 9 of 19
- Called 68.2% of time when present

- Phage (with cluster) where this start called: Anubis_28 (A3), B1_22 (A3), BabyJohn_23 (A3), BlessJoy_28 (A6), Bugatti_24 (A3), Bxz2_25 (A3), Calvinny_27 (A3), Chartreuse_28 (A6), Chiqui_23 (A3), DaVinci_28 (A6), DropBear_24 (A3), Giroux_24 (A3), Hanray_25 (A9), Horex_25 (A9), Huxley_24 (A4), Kachowdy_24 (A3), Kazan_28 (A6), Kingmustik0402_24 (A4), Koan_23 (A4), LeoAvram_24 (A4), Lilleskat_24 (A9), LunarLander_23 (A1), Marchesa_24 (A3), Mayonnaise_24 (A4), NorthStar_24 (A4), Onglai_25 (A9), PP_34 (A7), Sachima_24 (A9), SaturnRing_24 (A3), SenorClean_23 (A4),

Start 3:

- Found in 9 of 98 (9.2%) of genes in pham
- No Manual Annotations of this start.
- Called 55.6% of time when present
- Phage (with cluster) where this start called: Candra_28 (A6), Garak_29 (A6), Helmet_29 (A6), Polyphemus_27 (A6), Temprado_29 (A6),

Start 4:

- Found in 7 of 98 (7.1%) of genes in pham
- Manual Annotations of this start: 1 of 19
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bethlehem_23 (A1), EnzoK_23 (A1), Levia_22 (A1), McSinger_24 (A1), Mkhusei_24 (A1), PhineBark_23 (A1), Phlippers_22 (A1),

Start 5:

- Found in 1 of 98 (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: Travvers_28 (A2),

Start 6:

- Found in 17 of 98 (17.3%) of genes in pham
- No Manual Annotations of this start.
- Called 17.6% of time when present
- Phage (with cluster) where this start called: EdogawaKiddo_24 (A9), Jiawan_25 (A9), RyeScarlet_27 (A9),

Start 7:

- Found in 46 of 98 (46.9%) of genes in pham
- Manual Annotations of this start: 5 of 19
- Called 43.5% of time when present
- Phage (with cluster) where this start called: A6_21 (A1), Aeneas_25 (A1), BK1_21 (A1), BarrowTuph_22 (A1), Bigchungu_23 (A1), Bigflo_26 (A3), GMonster_22 (A1), Inyanga_22 (A1), Iqorha_22 (A1), Lowa_26 (A3), PhrostyMug_23 (A1), ProMouse_22 (A1), Sandaddy_22 (A1), Sanya_22 (A1), ShortQueendom_22 (A1), Snickers_26 (A3), StewieG_22 (A1), Teodoridan_21 (A1), TinyPebbles_26 (A3), U2_23 (A1),

Start 9:

- Found in 30 of 98 (30.6%) of genes in pham
- Manual Annotations of this start: 3 of 19
- Called 46.7% of time when present
- Phage (with cluster) where this start called: Bradman_24 (A2), C3_23 (A2), Caraxes_24 (A2), Che12_27 (A2), EZMoney23_29 (A2), JSwag_27 (A15),

LionsBait_26 (A2), MajorMajor_24 (A2), Oofda_28 (A15), Quokka_23 (A2), Rosa24_23 (A4), SwirlSquare_27 (A2), Tristan_26 (A2), Warrior24_28 (A15),

Start 11:

- Found in 1 of 98 (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: Petersenfast_24 (A11),

Start 12:

- Found in 12 of 98 (12.2%) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: DontArgue_23 (A10), DustyMartin_27 (A10), Rowdy_27 (A10), Shapes_27 (A10),

Start 14:

- Found in 26 of 98 (26.5%) of genes in pham
- Manual Annotations of this start: 1 of 19
- Called 26.9% of time when present
- Phage (with cluster) where this start called: AnnaL29_28 (A2), Colin_29 (A2), Gratitude_26 (A2), Koduck_25 (A2), Sknot_26 (A2), Terrific_29 (A2), WeiHuaDA_31 (A2),

Start 15:

- Found in 5 of 98 (5.1%) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Sunhee_23 (A14),

Start 16:

- Found in 13 of 98 (13.3%) of genes in pham
- No Manual Annotations of this start.
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Marco3_23 (A1),

Start 17:

- Found in 10 of 98 (10.2%) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Prinashe11_22 (A5), Twigg_21 (A5),

Start 19:

- Found in 3 of 98 (3.1%) of genes in pham
- No Manual Annotations of this start.
- Called 66.7% of time when present
- Phage (with cluster) where this start called: FlyCatcher_28 (A7), Toro_27 (A7),

Summary by clusters:

There are 12 clusters represented in this pham: A15, A14, A11, A10, A1, A3, A2, A5, A4, A7, A6, A9,

Info for manual annotations of cluster A1:

- Start number 4 was manually annotated 1 time for cluster A1.
- Start number 7 was manually annotated 5 times for cluster A1.

Info for manual annotations of cluster A15:

- Start number 9 was manually annotated 1 time for cluster A15.

Info for manual annotations of cluster A2:

- Start number 9 was manually annotated 2 times for cluster A2.
- Start number 14 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A3:

- Start number 2 was manually annotated 3 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 2 was manually annotated 3 times for cluster A4.

Info for manual annotations of cluster A6:

- Start number 2 was manually annotated 2 times for cluster A6.

Info for manual annotations of cluster A7:

- Start number 2 was manually annotated 1 time for cluster A7.

Gene Information:

Gene: A6_21 Start: 15547, Stop: 15918, Start Num: 7

Candidate Starts for A6_21:

(Start: 7 @15547 has 5 MA's), (29, 15736), (35, 15811), (41, 15868), (43, 15874),

Gene: Aeneas_25 Start: 16311, Stop: 16682, Start Num: 7

Candidate Starts for Aeneas_25:

(Start: 7 @16311 has 5 MA's), (29, 16500), (41, 16632), (43, 16638),

Gene: AnnaL29_28 Start: 18178, Stop: 18489, Start Num: 14

Candidate Starts for AnnaL29_28:

(Start: 14 @18178 has 1 MA's), (27, 18286), (31, 18310), (38, 18424), (40, 18430),

Gene: Anubis_28 Start: 15419, Stop: 15865, Start Num: 2

Candidate Starts for Anubis_28:

(Start: 2 @15419 has 9 MA's), (Start: 7 @15518 has 5 MA's), (27, 15689), (31, 15713), (38, 15815),

Gene: B1_22 Start: 14712, Stop: 15173, Start Num: 2

Candidate Starts for B1_22:

(Start: 2 @14712 has 9 MA's), (6, 14796), (Start: 7 @14811 has 5 MA's), (17, 14889), (27, 14982), (33, 15018), (42, 15123),

Gene: BK1_21 Start: 15547, Stop: 15918, Start Num: 7
Candidate Starts for BK1_21:
(Start: 7 @15547 has 5 MA's), (29, 15736), (35, 15811), (41, 15868), (43, 15874),

Gene: BabyJohn_23 Start: 15302, Stop: 15763, Start Num: 2
Candidate Starts for BabyJohn_23:
(Start: 2 @15302 has 9 MA's), (6, 15386), (Start: 7 @15401 has 5 MA's), (17, 15479), (27, 15572), (33, 15608), (42, 15713),

Gene: BarrowTuph_22 Start: 15861, Stop: 16232, Start Num: 7
Candidate Starts for BarrowTuph_22:
(Start: 7 @15861 has 5 MA's), (29, 16050), (41, 16182), (43, 16188),

Gene: Bethlehem_23 Start: 17213, Stop: 17614, Start Num: 4
Candidate Starts for Bethlehem_23:
(Start: 4 @17213 has 1 MA's), (Start: 7 @17243 has 5 MA's), (29, 17432), (41, 17564), (43, 17570),

Gene: Bigchungji_23 Start: 15989, Stop: 16360, Start Num: 7
Candidate Starts for Bigchungji_23:
(Start: 7 @15989 has 5 MA's), (29, 16178), (35, 16253), (41, 16310), (43, 16316),

Gene: Bigflo_26 Start: 15631, Stop: 15978, Start Num: 7
Candidate Starts for Bigflo_26:
(Start: 2 @15532 has 9 MA's), (Start: 7 @15631 has 5 MA's), (27, 15802), (31, 15826), (38, 15928),

Gene: BlessJoy_28 Start: 16261, Stop: 16722, Start Num: 2
Candidate Starts for BlessJoy_28:
(Start: 2 @16261 has 9 MA's), (3, 16306), (Start: 9 @16375 has 3 MA's), (13, 16414), (Start: 14 @16423 has 1 MA's), (16, 16432), (31, 16555), (38, 16666),

Gene: Bradman_24 Start: 15185, Stop: 15538, Start Num: 9
Candidate Starts for Bradman_24:
(Start: 9 @15185 has 3 MA's), (Start: 14 @15233 has 1 MA's), (38, 15473), (40, 15479),

Gene: Bugatti_24 Start: 15033, Stop: 15494, Start Num: 2
Candidate Starts for Bugatti_24:
(Start: 2 @15033 has 9 MA's), (6, 15117), (Start: 7 @15132 has 5 MA's), (12, 15183), (27, 15303), (33, 15339), (42, 15444),

Gene: Bxz2_25 Start: 15627, Stop: 16073, Start Num: 2
Candidate Starts for Bxz2_25:
(Start: 2 @15627 has 9 MA's), (Start: 7 @15726 has 5 MA's), (27, 15897), (31, 15921), (38, 16023),

Gene: C3_23 Start: 16308, Stop: 16661, Start Num: 9
Candidate Starts for C3_23:
(Start: 9 @16308 has 3 MA's), (Start: 14 @16356 has 1 MA's), (27, 16464), (32, 16491), (38, 16596), (40, 16602),

Gene: Calvinny_27 Start: 15611, Stop: 16057, Start Num: 2
Candidate Starts for Calvinny_27:
(Start: 2 @15611 has 9 MA's), (Start: 7 @15710 has 5 MA's), (27, 15881), (31, 15905), (38, 16007),

Gene: Candra_28 Start: 16359, Stop: 16778, Start Num: 3

Candidate Starts for Candra_28:

(Start: 2 @16314 has 9 MA's), (3, 16359), (Start: 9 @16428 has 3 MA's), (13, 16467), (Start: 14 @16476 has 1 MA's), (16, 16485), (23, 16563), (31, 16608), (38, 16722),

Gene: Caraxes_24 Start: 14918, Stop: 15277, Start Num: 9

Candidate Starts for Caraxes_24:

(Start: 9 @14918 has 3 MA's), (Start: 14 @14966 has 1 MA's), (27, 15074), (29, 15092), (38, 15212), (40, 15218),

Gene: Chartreuse_28 Start: 16225, Stop: 16689, Start Num: 2

Candidate Starts for Chartreuse_28:

(Start: 2 @16225 has 9 MA's), (3, 16270), (Start: 9 @16339 has 3 MA's), (13, 16378), (Start: 14 @16387 has 1 MA's), (16, 16396), (23, 16474), (31, 16519), (38, 16633),

Gene: Che12_27 Start: 15178, Stop: 15537, Start Num: 9

Candidate Starts for Che12_27:

(Start: 9 @15178 has 3 MA's), (Start: 14 @15226 has 1 MA's), (27, 15334), (29, 15352), (38, 15472), (40, 15478),

Gene: Chiqui_23 Start: 15302, Stop: 15763, Start Num: 2

Candidate Starts for Chiqui_23:

(Start: 2 @15302 has 9 MA's), (6, 15386), (Start: 7 @15401 has 5 MA's), (17, 15479), (27, 15572), (33, 15608), (42, 15713),

Gene: Colin_29 Start: 18010, Stop: 18321, Start Num: 14

Candidate Starts for Colin_29:

(Start: 14 @18010 has 1 MA's), (27, 18118), (29, 18136), (31, 18142), (38, 18256), (40, 18262),

Gene: DaVinci_28 Start: 16279, Stop: 16743, Start Num: 2

Candidate Starts for DaVinci_28:

(Start: 2 @16279 has 9 MA's), (3, 16324), (Start: 9 @16393 has 3 MA's), (13, 16432), (Start: 14 @16441 has 1 MA's), (16, 16450), (23, 16528), (31, 16573), (38, 16687),

Gene: DontArgue_23 Start: 13643, Stop: 14041, Start Num: 12

Candidate Starts for DontArgue_23:

(12, 13643), (13, 13646), (17, 13670), (22, 13739), (25, 13751), (29, 13781), (31, 13787), (37, 13856), (43, 13916), (48, 13958), (49, 13976),

Gene: DropBear_24 Start: 15093, Stop: 15554, Start Num: 2

Candidate Starts for DropBear_24:

(Start: 2 @15093 has 9 MA's), (6, 15177), (Start: 7 @15192 has 5 MA's), (12, 15243), (27, 15363), (33, 15399), (42, 15504),

Gene: DustyMartin_27 Start: 15449, Stop: 15850, Start Num: 12

Candidate Starts for DustyMartin_27:

(12, 15449), (17, 15476), (22, 15545), (25, 15557), (29, 15587), (31, 15593), (43, 15725), (48, 15767), (49, 15785),

Gene: EZMoney23_29 Start: 18248, Stop: 18607, Start Num: 9

Candidate Starts for EZMoney23_29:

(Start: 9 @18248 has 3 MA's), (Start: 14 @18296 has 1 MA's), (27, 18404), (31, 18428), (38, 18542), (40, 18548),

Gene: EdogawaKiddo_24 Start: 17045, Stop: 17461, Start Num: 6
Candidate Starts for EdogawaKiddo_24:
(Start: 2 @16961 has 9 MA's), (6, 17045), (Start: 7 @17060 has 5 MA's), (23, 17210), (27, 17231), (31, 17255), (43, 17381),

Gene: EnzoK_23 Start: 16164, Stop: 16565, Start Num: 4
Candidate Starts for EnzoK_23:
(Start: 4 @16164 has 1 MA's), (Start: 7 @16194 has 5 MA's), (29, 16383), (41, 16515), (43, 16521),

Gene: FlyCatcher_28 Start: 17296, Stop: 17556, Start Num: 19
Candidate Starts for FlyCatcher_28:
(16, 17266), (19, 17296), (38, 17506), (39, 17509), (43, 17521),

Gene: GMonster_22 Start: 15811, Stop: 16182, Start Num: 7
Candidate Starts for GMonster_22:
(Start: 7 @15811 has 5 MA's), (29, 16000), (41, 16132), (43, 16138),

Gene: Garak_29 Start: 16321, Stop: 16740, Start Num: 3
Candidate Starts for Garak_29:
(Start: 2 @16276 has 9 MA's), (3, 16321), (Start: 9 @16390 has 3 MA's), (13, 16429), (Start: 14 @16438 has 1 MA's), (16, 16447), (23, 16525), (31, 16570), (38, 16684),

Gene: Giroux_24 Start: 15033, Stop: 15494, Start Num: 2
Candidate Starts for Giroux_24:
(Start: 2 @15033 has 9 MA's), (6, 15117), (Start: 7 @15132 has 5 MA's), (12, 15183), (27, 15303), (33, 15339), (42, 15444),

Gene: Gratitude_26 Start: 16814, Stop: 17125, Start Num: 14
Candidate Starts for Gratitude_26:
(Start: 14 @16814 has 1 MA's), (27, 16922), (32, 16949), (36, 17015), (38, 17060), (40, 17066),

Gene: Hanray_25 Start: 16965, Stop: 17465, Start Num: 2
Candidate Starts for Hanray_25:
(Start: 2 @16965 has 9 MA's), (6, 17049), (Start: 7 @17064 has 5 MA's), (23, 17214), (27, 17235), (31, 17259), (43, 17385),

Gene: Helmet_29 Start: 16321, Stop: 16740, Start Num: 3
Candidate Starts for Helmet_29:
(Start: 2 @16276 has 9 MA's), (3, 16321), (Start: 9 @16390 has 3 MA's), (13, 16429), (Start: 14 @16438 has 1 MA's), (16, 16447), (23, 16525), (31, 16570), (38, 16684),

Gene: Horex_25 Start: 16965, Stop: 17465, Start Num: 2
Candidate Starts for Horex_25:
(Start: 2 @16965 has 9 MA's), (6, 17049), (Start: 7 @17064 has 5 MA's), (23, 17214), (27, 17235), (31, 17259), (43, 17385),

Gene: Huxley_24 Start: 15485, Stop: 16030, Start Num: 2
Candidate Starts for Huxley_24:
(Start: 2 @15485 has 9 MA's), (Start: 9 @15599 has 3 MA's), (18, 15677), (29, 15773), (32, 15782),

Gene: Inyanga_22 Start: 15755, Stop: 16126, Start Num: 7
Candidate Starts for Inyanga_22:
(Start: 7 @15755 has 5 MA's), (29, 15944), (35, 16019), (41, 16076), (43, 16082),

Gene: Iqorha_22 Start: 15754, Stop: 16125, Start Num: 7

Candidate Starts for Iqorha_22:

(Start: 7 @15754 has 5 MA's), (29, 15943), (35, 16018), (41, 16075), (43, 16081),

Gene: JSwag_27 Start: 15383, Stop: 15838, Start Num: 9

Candidate Starts for JSwag_27:

(Start: 9 @15383 has 3 MA's), (12, 15419), (15, 15434), (22, 15515), (28, 15545), (29, 15557), (34, 15596), (36, 15635), (43, 15695), (46, 15725),

Gene: Jiawan_25 Start: 17081, Stop: 17497, Start Num: 6

Candidate Starts for Jiawan_25:

(Start: 2 @16997 has 9 MA's), (6, 17081), (Start: 7 @17096 has 5 MA's), (23, 17246), (27, 17267), (31, 17291), (43, 17417),

Gene: Kachowdy_24 Start: 15086, Stop: 15547, Start Num: 2

Candidate Starts for Kachowdy_24:

(Start: 2 @15086 has 9 MA's), (6, 15170), (Start: 7 @15185 has 5 MA's), (17, 15263), (27, 15356), (33, 15392), (42, 15497),

Gene: Kazan_28 Start: 16284, Stop: 16748, Start Num: 2

Candidate Starts for Kazan_28:

(Start: 2 @16284 has 9 MA's), (3, 16329), (Start: 9 @16398 has 3 MA's), (13, 16437), (Start: 14 @16446 has 1 MA's), (16, 16455), (23, 16533), (31, 16578), (38, 16692),

Gene: Kingmustik0402_24 Start: 15413, Stop: 15958, Start Num: 2

Candidate Starts for Kingmustik0402_24:

(Start: 2 @15413 has 9 MA's), (Start: 9 @15527 has 3 MA's), (18, 15605), (29, 15701), (32, 15710),

Gene: Koan_23 Start: 15421, Stop: 15966, Start Num: 2

Candidate Starts for Koan_23:

(Start: 2 @15421 has 9 MA's), (Start: 9 @15535 has 3 MA's), (18, 15613), (29, 15709), (32, 15718),

Gene: Koduck_25 Start: 15488, Stop: 15793, Start Num: 14

Candidate Starts for Koduck_25:

(Start: 14 @15488 has 1 MA's), (38, 15728), (40, 15734),

Gene: LeoAvram_24 Start: 15418, Stop: 15963, Start Num: 2

Candidate Starts for LeoAvram_24:

(Start: 2 @15418 has 9 MA's), (Start: 9 @15532 has 3 MA's), (18, 15610), (29, 15706), (32, 15715),

Gene: Levia_22 Start: 16713, Stop: 17114, Start Num: 4

Candidate Starts for Levia_22:

(Start: 4 @16713 has 1 MA's), (Start: 7 @16743 has 5 MA's), (29, 16932), (41, 17064), (43, 17070),

Gene: Lilleskat_24 Start: 16961, Stop: 17461, Start Num: 2

Candidate Starts for Lilleskat_24:

(Start: 2 @16961 has 9 MA's), (6, 17045), (Start: 7 @17060 has 5 MA's), (23, 17210), (27, 17231), (31, 17255), (43, 17381),

Gene: LionsBait_26 Start: 18030, Stop: 18389, Start Num: 9

Candidate Starts for LionsBait_26:

(Start: 9 @18030 has 3 MA's), (Start: 14 @18078 has 1 MA's), (20, 18129), (30, 18207), (31, 18210), (32, 18213), (38, 18324), (39, 18327), (40, 18330),

Gene: Lova_26 Start: 15624, Stop: 15971, Start Num: 7

Candidate Starts for Lova_26:

(Start: 2 @15525 has 9 MA's), (Start: 7 @15624 has 5 MA's), (27, 15795), (31, 15819), (38, 15921),

Gene: LunarLander_23 Start: 15583, Stop: 16053, Start Num: 2

Candidate Starts for LunarLander_23:

(Start: 2 @15583 has 9 MA's), (Start: 7 @15682 has 5 MA's), (29, 15871), (32, 15880), (35, 15946), (41, 16003), (43, 16009),

Gene: MajorMajor_24 Start: 15185, Stop: 15538, Start Num: 9

Candidate Starts for MajorMajor_24:

(Start: 9 @15185 has 3 MA's), (Start: 14 @15233 has 1 MA's), (38, 15473), (40, 15479),

Gene: Marchesa_24 Start: 15084, Stop: 15545, Start Num: 2

Candidate Starts for Marchesa_24:

(Start: 2 @15084 has 9 MA's), (6, 15168), (Start: 7 @15183 has 5 MA's), (12, 15234), (27, 15354), (33, 15390), (42, 15495),

Gene: Marco3_23 Start: 16255, Stop: 16554, Start Num: 16

Candidate Starts for Marco3_23:

(16, 16255), (29, 16372), (41, 16504), (43, 16510),

Gene: Mayonnaise_24 Start: 15421, Stop: 15966, Start Num: 2

Candidate Starts for Mayonnaise_24:

(Start: 2 @15421 has 9 MA's), (Start: 9 @15535 has 3 MA's), (18, 15613), (29, 15709), (32, 15718),

Gene: McSinger_24 Start: 16353, Stop: 16754, Start Num: 4

Candidate Starts for McSinger_24:

(Start: 4 @16353 has 1 MA's), (Start: 7 @16383 has 5 MA's), (29, 16572), (41, 16704), (43, 16710),

Gene: Mkhuseleli_24 Start: 16008, Stop: 16409, Start Num: 4

Candidate Starts for Mkhuseleli_24:

(Start: 4 @16008 has 1 MA's), (8, 16047), (29, 16227), (41, 16359), (43, 16365),

Gene: NorthStar_24 Start: 15421, Stop: 15966, Start Num: 2

Candidate Starts for NorthStar_24:

(Start: 2 @15421 has 9 MA's), (Start: 9 @15535 has 3 MA's), (18, 15613), (29, 15709), (32, 15718),

Gene: Onglai_25 Start: 15295, Stop: 15795, Start Num: 2

Candidate Starts for Onglai_25:

(Start: 2 @15295 has 9 MA's), (6, 15379), (Start: 7 @15394 has 5 MA's), (23, 15544), (27, 15565), (31, 15589), (43, 15715),

Gene: Oofda_28 Start: 15368, Stop: 15823, Start Num: 9

Candidate Starts for Oofda_28:

(Start: 9 @15368 has 3 MA's), (12, 15404), (15, 15419), (22, 15500), (28, 15530), (29, 15542), (34, 15581), (36, 15620), (43, 15680), (46, 15710),

Gene: PP_34 Start: 21309, Stop: 21773, Start Num: 2

Candidate Starts for PP_34:

(Start: 2 @21309 has 9 MA's), (16, 21480), (19, 21513), (32, 21609), (42, 21735),

Gene: Petersenfast_24 Start: 16853, Stop: 17167, Start Num: 11

Candidate Starts for Petersenfast_24:

(11, 16853), (21, 16928), (24, 16958), (27, 16976), (32, 17003), (43, 17123), (44, 17126),

Gene: PhineBark_23 Start: 16713, Stop: 17114, Start Num: 4

Candidate Starts for PhineBark_23:

(Start: 4 @16713 has 1 MA's), (Start: 7 @16743 has 5 MA's), (29, 16932), (41, 17064), (43, 17070),

Gene: Phlippers_22 Start: 16908, Stop: 17309, Start Num: 4

Candidate Starts for Phlippers_22:

(Start: 4 @16908 has 1 MA's), (8, 16947), (29, 17127), (35, 17202), (41, 17259), (43, 17265),

Gene: PhrostyMug_23 Start: 16015, Stop: 16386, Start Num: 7

Candidate Starts for PhrostyMug_23:

(Start: 7 @16015 has 5 MA's), (29, 16204), (41, 16336), (43, 16342),

Gene: Polyphemus_27 Start: 16315, Stop: 16734, Start Num: 3

Candidate Starts for Polyphemus_27:

(Start: 2 @16270 has 9 MA's), (3, 16315), (Start: 9 @16384 has 3 MA's), (13, 16423), (Start: 14 @16432 has 1 MA's), (16, 16441), (31, 16564), (38, 16678),

Gene: Prinash11_22 Start: 14920, Stop: 15207, Start Num: 17

Candidate Starts for Prinash11_22:

(Start: 2 @14743 has 9 MA's), (17, 14920), (42, 15169), (43, 15172), (45, 15202),

Gene: ProMouse_22 Start: 16469, Stop: 16840, Start Num: 7

Candidate Starts for ProMouse_22:

(Start: 7 @16469 has 5 MA's), (29, 16658), (41, 16790), (43, 16796),

Gene: Quokka_23 Start: 15185, Stop: 15538, Start Num: 9

Candidate Starts for Quokka_23:

(Start: 9 @15185 has 3 MA's), (Start: 14 @15233 has 1 MA's), (38, 15473), (40, 15479),

Gene: Rosa24_23 Start: 15507, Stop: 15938, Start Num: 9

Candidate Starts for Rosa24_23:

(Start: 9 @15507 has 3 MA's), (18, 15585), (29, 15681), (32, 15690),

Gene: Rowdy_27 Start: 15449, Stop: 15850, Start Num: 12

Candidate Starts for Rowdy_27:

(12, 15449), (17, 15476), (22, 15545), (25, 15557), (29, 15587), (31, 15593), (43, 15725), (48, 15767), (49, 15785),

Gene: RyeScarlet_27 Start: 17049, Stop: 17465, Start Num: 6

Candidate Starts for RyeScarlet_27:

(Start: 2 @16965 has 9 MA's), (6, 17049), (Start: 7 @17064 has 5 MA's), (23, 17214), (27, 17235), (31, 17259), (43, 17385),

Gene: Sachima_24 Start: 16961, Stop: 17461, Start Num: 2

Candidate Starts for Sachima_24:

(Start: 2 @16961 has 9 MA's), (6, 17045), (Start: 7 @17060 has 5 MA's), (23, 17210), (27, 17231), (31, 17255), (43, 17381),

Gene: Sandaddy_22 Start: 15945, Stop: 16316, Start Num: 7

Candidate Starts for Sandaddy_22:

(Start: 7 @15945 has 5 MA's), (29, 16134), (35, 16209), (41, 16266), (43, 16272),

Gene: Sanya_22 Start: 16607, Stop: 16978, Start Num: 7

Candidate Starts for Sanya_22:

(Start: 7 @16607 has 5 MA's), (29, 16796), (32, 16805), (35, 16871), (41, 16928), (43, 16934),

Gene: SaturnRing_24 Start: 15033, Stop: 15494, Start Num: 2

Candidate Starts for SaturnRing_24:

(Start: 2 @15033 has 9 MA's), (6, 15117), (Start: 7 @15132 has 5 MA's), (12, 15183), (27, 15303), (33, 15339), (42, 15444),

Gene: SenorClean_23 Start: 15421, Stop: 15966, Start Num: 2

Candidate Starts for SenorClean_23:

(Start: 2 @15421 has 9 MA's), (Start: 9 @15535 has 3 MA's), (18, 15613), (29, 15709), (32, 15718),

Gene: Shapes_27 Start: 15449, Stop: 15850, Start Num: 12

Candidate Starts for Shapes_27:

(12, 15449), (17, 15476), (22, 15545), (25, 15557), (29, 15587), (31, 15593), (43, 15725), (48, 15767), (49, 15785),

Gene: ShortQueendom_22 Start: 15905, Stop: 16276, Start Num: 7

Candidate Starts for ShortQueendom_22:

(Start: 7 @15905 has 5 MA's), (29, 16094), (35, 16169), (41, 16226), (43, 16232),

Gene: Sknot_26 Start: 16372, Stop: 16683, Start Num: 14

Candidate Starts for Sknot_26:

(Start: 14 @16372 has 1 MA's), (27, 16480), (32, 16507), (36, 16573), (38, 16618), (40, 16624),

Gene: Snickers_26 Start: 15606, Stop: 15953, Start Num: 7

Candidate Starts for Snickers_26:

(Start: 2 @15507 has 9 MA's), (Start: 7 @15606 has 5 MA's), (27, 15777), (31, 15801), (38, 15903),

Gene: StewieG_22 Start: 15788, Stop: 16159, Start Num: 7

Candidate Starts for StewieG_22:

(Start: 7 @15788 has 5 MA's), (29, 15977), (35, 16052), (41, 16109), (43, 16115),

Gene: Sunhee_23 Start: 15505, Stop: 15801, Start Num: 15

Candidate Starts for Sunhee_23:

(15, 15505), (38, 15742), (40, 15748), (47, 15790),

Gene: SwirlSquare_27 Start: 15091, Stop: 15450, Start Num: 9

Candidate Starts for SwirlSquare_27:

(Start: 9 @15091 has 3 MA's), (Start: 14 @15139 has 1 MA's), (38, 15385), (40, 15391),

Gene: Temprado_29 Start: 16321, Stop: 16740, Start Num: 3

Candidate Starts for Temprado_29:

(Start: 2 @16276 has 9 MA's), (3, 16321), (Start: 9 @16390 has 3 MA's), (13, 16429), (Start: 14 @16438 has 1 MA's), (16, 16447), (23, 16525), (31, 16570), (38, 16684),

Gene: Teodoridan_21 Start: 15353, Stop: 15724, Start Num: 7

Candidate Starts for Teodoridan_21:

(Start: 7 @15353 has 5 MA's), (29, 15542), (35, 15617), (41, 15674), (43, 15680),

Gene: Terrific_29 Start: 16826, Stop: 17137, Start Num: 14

Candidate Starts for Terrific_29:

(Start: 14 @16826 has 1 MA's), (27, 16934), (32, 16961), (36, 17027), (38, 17072), (40, 17078),

Gene: TinyPebbles_26 Start: 15715, Stop: 16062, Start Num: 7

Candidate Starts for TinyPebbles_26:

(Start: 2 @15616 has 9 MA's), (Start: 7 @15715 has 5 MA's), (27, 15886), (31, 15910), (38, 16012),

Gene: Toro_27 Start: 17296, Stop: 17556, Start Num: 19

Candidate Starts for Toro_27:

(16, 17266), (19, 17296), (38, 17506), (39, 17509), (43, 17521),

Gene: Travvers_28 Start: 16132, Stop: 16518, Start Num: 5

Candidate Starts for Travvers_28:

(1, 15928), (5, 16132), (Start: 14 @16213 has 1 MA's), (32, 16348), (38, 16453), (40, 16459),

Gene: Tristan_26 Start: 18035, Stop: 18379, Start Num: 9

Candidate Starts for Tristan_26:

(Start: 9 @18035 has 3 MA's), (10, 18047), (15, 18086), (20, 18134), (24, 18173), (26, 18182), (31, 18215), (32, 18218), (38, 18326), (40, 18332),

Gene: Twigg_21 Start: 14923, Stop: 15210, Start Num: 17

Candidate Starts for Twigg_21:

(Start: 2 @14746 has 9 MA's), (17, 14923), (42, 15172), (43, 15175), (45, 15205),

Gene: U2_23 Start: 16127, Stop: 16498, Start Num: 7

Candidate Starts for U2_23:

(Start: 7 @16127 has 5 MA's), (29, 16316), (41, 16448), (43, 16454),

Gene: Warrior24_28 Start: 15368, Stop: 15823, Start Num: 9

Candidate Starts for Warrior24_28:

(Start: 9 @15368 has 3 MA's), (12, 15404), (15, 15419), (22, 15500), (28, 15530), (29, 15542), (34, 15581), (36, 15620), (43, 15680), (46, 15710),

Gene: WeiHuaDA_31 Start: 18580, Stop: 18891, Start Num: 14

Candidate Starts for WeiHuaDA_31:

(Start: 14 @18580 has 1 MA's), (27, 18688), (31, 18712), (32, 18715), (38, 18826), (40, 18832),