

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 294493 Report

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

Pham number 294493 has 150 members, 22 are drafts.

Phages represented in each track:

- Track 1 : Vulpecula_63
- Track 2 : Pollux_80, Marteena_76
- Track 3 : Madavieve_75
- Track 4 : BoyNamedSue_77
- Track 5 : Hugley_77, Nymphadora_79
- Track 6 : Hyzer_95
- Track 7 : Oregano_74, Suerte_69
- Track 8 : Tuti_75
- Track 9 : PhriskyACE_70
- Track 10 : Mcklovin_74
- Track 11 : Easley_73, Beenie_69, Invectra_78
- Track 12 : Dorito_69, Powerball_71
- Track 13 : RayTheFireFly_72
- Track 14 : Opie_72, Eyes_64, MagicMan_69, Schnabeltier_70
- Track 15 : ZAYM_75
- Track 16 : Coriander_65
- Track 17 : Bunker_60
- Track 18 : BackstagePass_71
- Track 19 : BBQValindra_66
- Track 20 : GEazy_72
- Track 21 : Kiko_66
- Track 22 : DirtyBoi_67
- Track 23 : Bowser_66
- Track 24 : HannahD_69
- Track 25 : Doggs_63
- Track 26 : TaronosaurusRx_74
- Track 27 : Moonflower_64
- Track 28 : Hedwig_69
- Track 29 : Dmitri_62
- Track 30 : DeadP_95, Wachhund_92, Geralt_87, MulchExplorer_94, NewHope4_99, RitaG_93, Kenuha5_87, BuzzLyseyear_101, Royals2015_97, Eish_100, BodEinwohner17_104, Spikelee_95, Peridot_97, GigiOuiOui_89, IMpilo_92, Boomer_97, Madiba_93, Galactic_95, Mahavrat_90, IbOuu_85, WillSterrel_92, DaddyRickover_96, Juice456_93, Tweety_95, Inventum_92, Ms6_96, Enzomatic_104, DoRead_96, Hamulus_95, Phalconet_95, PhilipPhlop_84, Slim_97, Wee_98, Ovechkin_98, Florinda_106, Polka14_98, DirtMcgirt_95, Doomphist_99, Seagreen_95, Squirty_94, IrishSherpFalk_94, Harley_97, Empress_94, Ardmore_79,

UncleRicky_94, LittleShirley_102, Fastidio_98, KingMidas_94, Dorothy_95, Lorde_97, Phatniss_92, Deb65_87, Emma_99, Byougenkin_92, Leperchaun_96, PMC_93, Girafales_103, Lucia_95, Poenanya_98, Polo2Bam_103, RockyHorror_98, Nimbo_86, Enby_98, Hades_91, Vivum_92, Medindi_99, Sassafras_96, Moonbeam_97, Ibhubesi_92, Hegedechwinu_101, RedBird_95, Ramsey_99, Taj_101, MilleniumForce_94, Scottish_94, Juniper1_88, JoeyJr_97, Filuzino_94, Kimberlium_96, OldBen_91, Emmaloid_97, SimranZ1_90, GUmbie_93, Starcevich_96, DaWorst_94, XFactor_85, Cornucopia_94, Daenerys_92, Drago_93, Jant_100, Rockne_97, CaptainTrips_96, PHappiness_94, DLane_94, VRedHorse_95, Violac_96, Quico_103, EmiMonkey_83, LunaBlu_98, Stap_89, SeaLumen_100, DotProduct_88, Fruitloop_92, StAnnes_98, Grimmer_103, Estave1_102, PhesterPotato_98, QuickMath_95

- Track 31 : KristaRAM_100
- Track 32 : Ogopogo_99
- Track 33 : REQ2_81
- Track 34 : Chymera_52

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

The start number called the most often in the published annotations is 32, it was called in 108 of the 128 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ardmore_79, BBQValindra_66, BackstagePass_71, BodEinwohner17_104, Boomer_97, Bowser_66, BuzzLyseyear_101, Byougenkin_92, CaptainTrips_96, Coriander_65, Cornucopia_94, DLane_94, DaWorst_94, DaddyRickover_96, Daenerys_92, DeadP_95, Deb65_87, DirtMcGirt_95, DirtyBoi_67, Dmitri_62, DoRead_96, Doomphist_99, Dorothy_95, DotProduct_88, Drago_93, Eish_100, EmiMonkey_83, Emma_99, Emmaloid_97, Empress_94, Enby_98, Enzomatic_104, Estave1_102, Eyes_64, Fastidio_98, Filuzino_94, Florinda_106, Fruitloop_92, GUmbie_93, Galactic_95, Geralt_87, GigiOuiOui_89, Girafales_103, Grimmer_103, Hades_91, Hamulus_95, HannahD_69, Harley_97, Hegedechwinu_101, IMpilo_92, IbOuu_85, Ibhubesi_92, Inventum_92, IrishSherpFalk_94, Jant_100, JoeyJr_97, Juice456_93, Juniper1_88, Kenuha5_87, Kiko_66, Kimberlium_96, KingMidas_94, KristaRAM_100, Leperchaun_96, LittleShirley_102, Lorde_97, Lucia_95, LunaBlu_98, Madiba_93, MagicMan_69, Mahavrat_90, Medindi_99, MilleniumForce_94, Moonbeam_97, Moonflower_64, Ms6_96, MulchExplorer_94, NewHope4_99, Nimbo_86, OldBen_91, Opie_72, Ovechkin_98, PHappiness_94, PMC_93, Peridot_97, Phalconet_95, Phatniss_92, PhesterPotato_98, PhilipPhlop_84, Poenanya_98, Polka14_98, Polo2Bam_103, QuickMath_95, Quico_103, REQ2_81, Ramsey_99, RedBird_95, RitaG_93, Rockne_97, RockyHorror_98, Royals2015_97, Sassafras_96, Schnabeltier_70, Scottish_94, SeaLumen_100, Seagreen_95, SimranZ1_90, Slim_97, Spikelee_95, Squirty_94, StAnnes_98, Stap_89, Starcevich_96, Taj_101, TaronosaurusRx_74, Tweety_95, UncleRicky_94, VRedHorse_95, Violac_96, Vivum_92, Wachhund_92, Wee_98, WillSterrel_92, XFactor_85, ZAYM_75,

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

- Bunker_60, Dogs_63, GEazy_72, Hedwig_69, RayTheFireFly_72,

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

- Beenie_69, BoyNamedSue_77, Chymera_52, Dorito_69, Easley_73, Hugley_77, Hyzer_95, Invectra_78, Madavieve_75, Marteena_76, Mcklovin_74, Nymphadora_79, Ogopogo_99, Oregano_74, PhriskyACE_70, Pollux_80, Powerball_71, Suerte_69, Tuti_75, Vulpecula_63,

Summary by start number:

Start 20:

- Found in 6 of 150 (4.0%) of genes in pham
- Manual Annotations of this start: 3 of 128
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Doggs_63 (DB), Hedwig_69 (DB), RayTheFireFly_72 (DB),

Start 26:

- Found in 12 of 150 (8.0%) of genes in pham
- Manual Annotations of this start: 2 of 128
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Bunker_60 (DB), GEazy_72 (DB),

Start 31:

- Found in 2 of 150 (1.3%) of genes in pham
- Manual Annotations of this start: 2 of 128
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chymera_52 (singleton), Ogopogo_99 (F1),

Start 32:

- Found in 130 of 150 (86.7%) of genes in pham
- Manual Annotations of this start: 108 of 128
- Called 96.2% of time when present
- Phage (with cluster) where this start called: Ardmore_79 (F1), BBQValindra_66 (DB), BackstagePass_71 (DB), BodEinwohner17_104 (F1), Boomer_97 (F1), Bowser_66 (DB), BuzzLyseyear_101 (F1), Byougenkin_92 (F1), CaptainTrips_96 (F1), Coriander_65 (DB), Cornucopia_94 (F1), DLane_94 (F1), DaWorst_94 (F1), DaddyRickover_96 (F1), Daenerys_92 (F1), DeadP_95 (F1), Deb65_87 (F1), DirtMcgirt_95 (F1), DirtyBoi_67 (DB), Dmitri_62 (DB), DoRead_96 (F1), Doomphist_99 (F1), Dorothy_95 (F1), DotProduct_88 (F1), Drago_93 (F1), Eish_100 (F1), EmiMonkey_83 (F1), Emma_99 (F1), Emmaloid_97 (F1), Empress_94 (F1), Enby_98 (F1), Enzomatic_104 (F1), Estave1_102 (F1), Eyes_64 (DB), Fastidio_98 (F1), Filuzino_94 (F1), Florinda_106 (F1), Fruitloop_92 (F1), GUmbie_93 (F1), Galactic_95 (F1), Geralt_87 (F1), GigiOuiOui_89 (F1), Girafales_103 (F1), Grimmer_103 (F1), Hades_91 (F1), Hamulus_95 (F1), HannahD_69 (DB), Harley_97 (F1), Hegedechwinu_101 (F1), IMpilo_92 (F1), IbOuu_85 (F1), Ibhuesi_92 (F1), Inventum_92 (F1), IrishSherpFalk_94 (F1), Jant_100 (F1), JoeyJr_97 (F1), Juice456_93 (F1), Juniper1_88 (F1), Kenuha5_87 (F1), Kiko_66 (DB), Kimberlium_96 (F1), KingMidas_94 (F1), KristaRAM_100 (F1), Leperchaun_96 (F1), LittleShirley_102 (F1), Lorde_97 (F1), Lucia_95 (F1), LunaBlu_98 (F1), Madiba_93 (F1), MagicMan_69 (DB), Mahavrat_90 (F1), Medindi_99 (F1), MilleniumForce_94 (F1), Moonbeam_97 (F1), Moonflower_64 (DB), Ms6_96 (F1), MulchExplorer_94 (F1), NewHope4_99 (F1), Nimbo_86 (F1), OldBen_91 (F1), Opie_72 (DB), Ovechkin_98 (F1), PHappiness_94 (F1), PMC_93 (F1), Peridot_97 (F1), Phalconet_95 (F1), Phatniss_92 (F1),

PhesterPhotato_98 (F1), PhilipPhlop_84 (F1), Poenanya_98 (F1), Polka14_98 (F1), Polo2Bam_103 (F1), QuickMath_95 (F1), Quico_103 (F1), REQ2_81 (singleton), Ramsey_99 (F1), RedBird_95 (F1), RitaG_93 (F1), Rockne_97 (F1), RockyHorror_98 (F1), Royals2015_97 (F1), Sassafras_96 (F1), Schnabeltier_70 (DB), Scottish_94 (F1), SeaLumen_100 (F1), Seagreen_95 (F1), SimranZ1_90 (F1), Slim_97 (F1), Spikelee_95 (F1), Squirty_94 (F3), StAnnes_98 (F1), Stap_89 (F1), Starceвич_96 (F1), Taj_101 (F1), TaronosaurusRx_74 (DB), Tweety_95 (F1), UncleRicky_94 (F1), VRedHorse_95 (F1), Violac_96 (F1), Vivum_92 (F1), Wachhund_92 (F1), Wee_98 (F1), WillSterrel_92 (F1), XFactor_85 (F1), ZAYM_75 (DB),

Start 33:

- Found in 13 of 150 (8.7%) of genes in pham
- Manual Annotations of this start: 8 of 128
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beenie_69 (CZ4), BoyNamedSue_77 (CZ1), Easley_73 (CZ4), Hugley_77 (CZ1), Hyzer_95 (CZ1), Invecetra_78 (CZ4), Madavieve_75 (CZ1), Marteena_76 (CY1), Mcklovin_74 (CZ4), Nymphadora_79 (CZ1), PhriskyACE_70 (CZ4), Pollux_80 (CY1), Tuti_75 (CZ4),

Start 34:

- Found in 1 of 150 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 128
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Vulpecula_63 (AS1),

Start 35:

- Found in 7 of 150 (4.7%) of genes in pham
- Manual Annotations of this start: 4 of 128
- Called 57.1% of time when present
- Phage (with cluster) where this start called: Dorito_69 (CZ4), Oregano_74 (CZ4), Powerball_71 (CZ4), Suerte_69 (CZ4),

Summary by clusters:

There are 8 clusters represented in this pham: CY1, F1, AS1, F3, CZ1, DB, singleton, CZ4,

Info for manual annotations of cluster AS1:

- Start number 34 was manually annotated 1 time for cluster AS1.

Info for manual annotations of cluster CY1:

- Start number 33 was manually annotated 2 times for cluster CY1.

Info for manual annotations of cluster CZ1:

- Start number 33 was manually annotated 2 times for cluster CZ1.

Info for manual annotations of cluster CZ4:

- Start number 33 was manually annotated 4 times for cluster CZ4.
- Start number 35 was manually annotated 4 times for cluster CZ4.

Info for manual annotations of cluster DB:

- Start number 20 was manually annotated 3 times for cluster DB.
- Start number 26 was manually annotated 2 times for cluster DB.

- Start number 32 was manually annotated 12 times for cluster DB.

Info for manual annotations of cluster F1:

- Start number 31 was manually annotated 1 time for cluster F1.
- Start number 32 was manually annotated 95 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 32 was manually annotated 1 time for cluster F3.

Gene Information:

Gene: Ardmore_79 Start: 47310, Stop: 47534, Start Num: 32

Candidate Starts for Ardmore_79:

(Start: 32 @47310 has 108 MA's), (43, 47409),

Gene: BBQValindra_66 Start: 46200, Stop: 46448, Start Num: 32

Candidate Starts for BBQValindra_66:

(Start: 26 @46137 has 2 MA's), (Start: 32 @46200 has 108 MA's), (42, 46296), (46, 46350), (48, 46359), (52, 46404),

Gene: BackstagePass_71 Start: 45548, Stop: 45796, Start Num: 32

Candidate Starts for BackstagePass_71:

(Start: 26 @45485 has 2 MA's), (Start: 32 @45548 has 108 MA's), (42, 45644), (46, 45698), (48, 45707),

Gene: Beenie_69 Start: 46326, Stop: 46541, Start Num: 33

Candidate Starts for Beenie_69:

(6, 45720), (7, 45735), (10, 45951), (11, 45957), (13, 46023), (14, 46059), (18, 46215), (23, 46230), (27, 46263), (30, 46290), (Start: 33 @46326 has 8 MA's), (42, 46416), (44, 46428), (50, 46488),

Gene: BodEinwohner17_104 Start: 55362, Stop: 55586, Start Num: 32

Candidate Starts for BodEinwohner17_104:

(Start: 32 @55362 has 108 MA's), (43, 55461),

Gene: Boomer_97 Start: 53595, Stop: 53819, Start Num: 32

Candidate Starts for Boomer_97:

(Start: 32 @53595 has 108 MA's), (43, 53694),

Gene: Bowser_66 Start: 45894, Stop: 46142, Start Num: 32

Candidate Starts for Bowser_66:

(Start: 26 @45828 has 2 MA's), (Start: 32 @45894 has 108 MA's), (42, 45990), (47, 46050), (48, 46053),

Gene: BoyNamedSue_77 Start: 50965, Stop: 51180, Start Num: 33

Candidate Starts for BoyNamedSue_77:

(13, 50662), (14, 50698), (18, 50854), (23, 50869), (27, 50902), (Start: 33 @50965 has 8 MA's), (40, 51040), (42, 51055), (44, 51067),

Gene: Bunker_60 Start: 44770, Stop: 45081, Start Num: 26

Candidate Starts for Bunker_60:

(Start: 26 @44770 has 2 MA's), (Start: 32 @44833 has 108 MA's), (42, 44929), (46, 44983), (48, 44992),

Gene: BuzzLyseyear_101 Start: 55092, Stop: 55316, Start Num: 32
Candidate Starts for BuzzLyseyear_101:
(Start: 32 @55092 has 108 MA's), (43, 55191),

Gene: Byougenkin_92 Start: 49932, Stop: 50156, Start Num: 32
Candidate Starts for Byougenkin_92:
(Start: 32 @49932 has 108 MA's), (43, 50031),

Gene: CaptainTrips_96 Start: 52498, Stop: 52722, Start Num: 32
Candidate Starts for CaptainTrips_96:
(Start: 32 @52498 has 108 MA's), (43, 52597),

Gene: Chymera_52 Start: 33565, Stop: 33825, Start Num: 31
Candidate Starts for Chymera_52:
(Start: 31 @33565 has 2 MA's), (49, 33724),

Gene: Coriander_65 Start: 43545, Stop: 43793, Start Num: 32
Candidate Starts for Coriander_65:
(Start: 32 @43545 has 108 MA's), (Start: 35 @43560 has 4 MA's), (41, 43632), (50, 43737), (52, 43746),

Gene: Cornucopia_94 Start: 50874, Stop: 51098, Start Num: 32
Candidate Starts for Cornucopia_94:
(Start: 32 @50874 has 108 MA's), (43, 50973),

Gene: DLane_94 Start: 53780, Stop: 54004, Start Num: 32
Candidate Starts for DLane_94:
(Start: 32 @53780 has 108 MA's), (43, 53879),

Gene: DaWorst_94 Start: 52690, Stop: 52914, Start Num: 32
Candidate Starts for DaWorst_94:
(Start: 32 @52690 has 108 MA's), (43, 52789),

Gene: DaddyRickover_96 Start: 53556, Stop: 53780, Start Num: 32
Candidate Starts for DaddyRickover_96:
(Start: 32 @53556 has 108 MA's), (43, 53655),

Gene: Daenerys_92 Start: 53725, Stop: 53949, Start Num: 32
Candidate Starts for Daenerys_92:
(Start: 32 @53725 has 108 MA's), (43, 53824),

Gene: DeadP_95 Start: 51561, Stop: 51785, Start Num: 32
Candidate Starts for DeadP_95:
(Start: 32 @51561 has 108 MA's), (43, 51660),

Gene: Deb65_87 Start: 51449, Stop: 51673, Start Num: 32
Candidate Starts for Deb65_87:
(Start: 32 @51449 has 108 MA's), (43, 51548),

Gene: DirtMcgirt_95 Start: 50205, Stop: 50429, Start Num: 32

Candidate Starts for DirtMcgirt_95:
(Start: 32 @50205 has 108 MA's), (43, 50304),

Gene: DirtyBoi_67 Start: 43186, Stop: 43434, Start Num: 32
Candidate Starts for DirtyBoi_67:
(Start: 20 @43087 has 3 MA's), (Start: 32 @43186 has 108 MA's), (41, 43273),

Gene: Dmitri_62 Start: 45089, Stop: 45337, Start Num: 32
Candidate Starts for Dmitri_62:
(Start: 20 @44990 has 3 MA's), (Start: 32 @45089 has 108 MA's), (41, 45176), (47, 45242),

Gene: DoRead_96 Start: 51020, Stop: 51244, Start Num: 32
Candidate Starts for DoRead_96:
(Start: 32 @51020 has 108 MA's), (43, 51119),

Gene: Doggs_63 Start: 44639, Stop: 44986, Start Num: 20
Candidate Starts for Doggs_63:
(Start: 20 @44639 has 3 MA's), (Start: 32 @44738 has 108 MA's), (Start: 35 @44753 has 4 MA's), (41, 44825), (50, 44930), (52, 44939),

Gene: Doomphist_99 Start: 54376, Stop: 54600, Start Num: 32
Candidate Starts for Doomphist_99:
(Start: 32 @54376 has 108 MA's), (43, 54475),

Gene: Dorito_69 Start: 44511, Stop: 44738, Start Num: 35
Candidate Starts for Dorito_69:
(Start: 35 @44511 has 4 MA's), (37, 44517), (40, 44574), (50, 44661),

Gene: Dorothy_95 Start: 54545, Stop: 54769, Start Num: 32
Candidate Starts for Dorothy_95:
(Start: 32 @54545 has 108 MA's), (43, 54644),

Gene: DotProduct_88 Start: 50563, Stop: 50787, Start Num: 32
Candidate Starts for DotProduct_88:
(Start: 32 @50563 has 108 MA's), (43, 50662),

Gene: Drago_93 Start: 50208, Stop: 50432, Start Num: 32
Candidate Starts for Drago_93:
(Start: 32 @50208 has 108 MA's), (43, 50307),

Gene: Easley_73 Start: 45090, Stop: 45305, Start Num: 33
Candidate Starts for Easley_73:
(6, 44484), (7, 44499), (10, 44715), (11, 44721), (13, 44787), (14, 44823), (18, 44979), (23, 44994), (27, 45027), (30, 45054), (Start: 33 @45090 has 8 MA's), (42, 45180), (44, 45192), (50, 45252),

Gene: Eish_100 Start: 54009, Stop: 54233, Start Num: 32
Candidate Starts for Eish_100:
(Start: 32 @54009 has 108 MA's), (43, 54108),

Gene: EmiMonkey_83 Start: 54212, Stop: 54436, Start Num: 32
Candidate Starts for EmiMonkey_83:
(Start: 32 @54212 has 108 MA's), (43, 54311),

Gene: Emma_99 Start: 52064, Stop: 52288, Start Num: 32

Candidate Starts for Emma_99:

(Start: 32 @52064 has 108 MA's), (43, 52163),

Gene: Emmaloid_97 Start: 52984, Stop: 53208, Start Num: 32

Candidate Starts for Emmaloid_97:

(Start: 32 @52984 has 108 MA's), (43, 53083),

Gene: Empress_94 Start: 52639, Stop: 52863, Start Num: 32

Candidate Starts for Empress_94:

(Start: 32 @52639 has 108 MA's), (43, 52738),

Gene: Enby_98 Start: 50484, Stop: 50708, Start Num: 32

Candidate Starts for Enby_98:

(Start: 32 @50484 has 108 MA's), (43, 50583),

Gene: Enzomatic_104 Start: 51645, Stop: 51869, Start Num: 32

Candidate Starts for Enzomatic_104:

(Start: 32 @51645 has 108 MA's), (43, 51744),

Gene: Estave1_102 Start: 56371, Stop: 56595, Start Num: 32

Candidate Starts for Estave1_102:

(Start: 32 @56371 has 108 MA's), (43, 56470),

Gene: Eyes_64 Start: 46097, Stop: 46345, Start Num: 32

Candidate Starts for Eyes_64:

(Start: 26 @46034 has 2 MA's), (Start: 32 @46097 has 108 MA's), (42, 46193), (47, 46253), (48, 46256),

Gene: Fastidio_98 Start: 50955, Stop: 51179, Start Num: 32

Candidate Starts for Fastidio_98:

(Start: 32 @50955 has 108 MA's), (43, 51054),

Gene: Filuzino_94 Start: 54475, Stop: 54699, Start Num: 32

Candidate Starts for Filuzino_94:

(Start: 32 @54475 has 108 MA's), (43, 54574),

Gene: Florinda_106 Start: 54860, Stop: 55084, Start Num: 32

Candidate Starts for Florinda_106:

(Start: 32 @54860 has 108 MA's), (43, 54959),

Gene: Fruitloop_92 Start: 53617, Stop: 53841, Start Num: 32

Candidate Starts for Fruitloop_92:

(Start: 32 @53617 has 108 MA's), (43, 53716),

Gene: GEazy_72 Start: 45990, Stop: 46301, Start Num: 26

Candidate Starts for GEazy_72:

(Start: 26 @45990 has 2 MA's), (Start: 32 @46053 has 108 MA's), (40, 46134), (42, 46149), (46, 46203), (48, 46212),

Gene: GUmbie_93 Start: 52577, Stop: 52801, Start Num: 32

Candidate Starts for GUmbie_93:

(Start: 32 @52577 has 108 MA's), (43, 52676),

Gene: Galactic_95 Start: 52179, Stop: 52403, Start Num: 32

Candidate Starts for Galactic_95:

(Start: 32 @52179 has 108 MA's), (43, 52278),

Gene: Geralt_87 Start: 51447, Stop: 51671, Start Num: 32

Candidate Starts for Geralt_87:

(Start: 32 @51447 has 108 MA's), (43, 51546),

Gene: GigiOuiOui_89 Start: 51580, Stop: 51804, Start Num: 32

Candidate Starts for GigiOuiOui_89:

(Start: 32 @51580 has 108 MA's), (43, 51679),

Gene: Girafales_103 Start: 54465, Stop: 54689, Start Num: 32

Candidate Starts for Girafales_103:

(Start: 32 @54465 has 108 MA's), (43, 54564),

Gene: Grimmer_103 Start: 53161, Stop: 53385, Start Num: 32

Candidate Starts for Grimmer_103:

(Start: 32 @53161 has 108 MA's), (43, 53260),

Gene: Hades_91 Start: 50166, Stop: 50390, Start Num: 32

Candidate Starts for Hades_91:

(Start: 32 @50166 has 108 MA's), (43, 50265),

Gene: Hamulus_95 Start: 52528, Stop: 52752, Start Num: 32

Candidate Starts for Hamulus_95:

(Start: 32 @52528 has 108 MA's), (43, 52627),

Gene: HannahD_69 Start: 45420, Stop: 45668, Start Num: 32

Candidate Starts for HannahD_69:

(Start: 26 @45357 has 2 MA's), (Start: 32 @45420 has 108 MA's), (40, 45501), (42, 45516), (46, 45570), (48, 45579),

Gene: Harley_97 Start: 53710, Stop: 53934, Start Num: 32

Candidate Starts for Harley_97:

(Start: 32 @53710 has 108 MA's), (43, 53809),

Gene: Hedwig_69 Start: 43790, Stop: 44137, Start Num: 20

Candidate Starts for Hedwig_69:

(Start: 20 @43790 has 3 MA's), (Start: 32 @43889 has 108 MA's), (Start: 35 @43904 has 4 MA's), (41, 43976), (52, 44090),

Gene: Hegedechwinu_101 Start: 52838, Stop: 53062, Start Num: 32

Candidate Starts for Hegedechwinu_101:

(Start: 32 @52838 has 108 MA's), (43, 52937),

Gene: Hugley_77 Start: 52070, Stop: 52285, Start Num: 33

Candidate Starts for Hugley_77:

(3, 51236), (5, 51248), (6, 51464), (7, 51479), (8, 51509), (9, 51689), (10, 51695), (11, 51701), (14, 51803), (18, 51959), (23, 51974), (27, 52007), (Start: 33 @52070 has 8 MA's), (40, 52145), (42, 52160), (44, 52172),

Gene: Hyzer_95 Start: 58740, Stop: 58955, Start Num: 33
Candidate Starts for Hyzer_95:
(2, 57807), (4, 57915), (6, 58134), (7, 58149), (10, 58365), (11, 58371), (14, 58473), (18, 58629), (23, 58644), (27, 58677), (30, 58704), (Start: 33 @58740 has 8 MA's), (42, 58830), (44, 58842),

Gene: IMpilo_92 Start: 51182, Stop: 51406, Start Num: 32
Candidate Starts for IMpilo_92:
(Start: 32 @51182 has 108 MA's), (43, 51281),

Gene: lbOuu_85 Start: 50477, Stop: 50701, Start Num: 32
Candidate Starts for lbOuu_85:
(Start: 32 @50477 has 108 MA's), (43, 50576),

Gene: lbhubesi_92 Start: 50579, Stop: 50803, Start Num: 32
Candidate Starts for lbhubesi_92:
(Start: 32 @50579 has 108 MA's), (43, 50678),

Gene: Invectra_78 Start: 47662, Stop: 47877, Start Num: 33
Candidate Starts for Invectra_78:
(6, 47056), (7, 47071), (10, 47287), (11, 47293), (13, 47359), (14, 47395), (18, 47551), (23, 47566), (27, 47599), (30, 47626), (Start: 33 @47662 has 8 MA's), (42, 47752), (44, 47764), (50, 47824),

Gene: Inventum_92 Start: 52733, Stop: 52957, Start Num: 32
Candidate Starts for Inventum_92:
(Start: 32 @52733 has 108 MA's), (43, 52832),

Gene: IrishSherpFalk_94 Start: 53004, Stop: 53228, Start Num: 32
Candidate Starts for IrishSherpFalk_94:
(Start: 32 @53004 has 108 MA's), (43, 53103),

Gene: Jant_100 Start: 52288, Stop: 52512, Start Num: 32
Candidate Starts for Jant_100:
(Start: 32 @52288 has 108 MA's), (43, 52387),

Gene: JoeyJr_97 Start: 54641, Stop: 54865, Start Num: 32
Candidate Starts for JoeyJr_97:
(Start: 32 @54641 has 108 MA's), (43, 54740),

Gene: Juice456_93 Start: 52353, Stop: 52577, Start Num: 32
Candidate Starts for Juice456_93:
(Start: 32 @52353 has 108 MA's), (43, 52452),

Gene: Juniper1_88 Start: 51701, Stop: 51925, Start Num: 32
Candidate Starts for Juniper1_88:
(Start: 32 @51701 has 108 MA's), (43, 51800),

Gene: Kenuha5_87 Start: 52359, Stop: 52583, Start Num: 32
Candidate Starts for Kenuha5_87:
(Start: 32 @52359 has 108 MA's), (43, 52458),

Gene: Kiko_66 Start: 43613, Stop: 43864, Start Num: 32
Candidate Starts for Kiko_66:

(Start: 26 @43550 has 2 MA's), (29, 43577), (Start: 32 @43613 has 108 MA's), (52, 43814), (54, 43841),

Gene: Kimberlium_96 Start: 52453, Stop: 52677, Start Num: 32
Candidate Starts for Kimberlium_96:
(Start: 32 @52453 has 108 MA's), (43, 52552),

Gene: KingMidas_94 Start: 52870, Stop: 53094, Start Num: 32
Candidate Starts for KingMidas_94:
(Start: 32 @52870 has 108 MA's), (43, 52969),

Gene: KristaRAM_100 Start: 53831, Stop: 54055, Start Num: 32
Candidate Starts for KristaRAM_100:
(16, 53708), (28, 53774), (Start: 32 @53831 has 108 MA's), (43, 53930), (44, 53936), (51, 53999),

Gene: Leperchaun_96 Start: 53875, Stop: 54099, Start Num: 32
Candidate Starts for Leperchaun_96:
(Start: 32 @53875 has 108 MA's), (43, 53974),

Gene: LittleShirley_102 Start: 54183, Stop: 54407, Start Num: 32
Candidate Starts for LittleShirley_102:
(Start: 32 @54183 has 108 MA's), (43, 54282),

Gene: Lorde_97 Start: 49649, Stop: 49873, Start Num: 32
Candidate Starts for Lorde_97:
(Start: 32 @49649 has 108 MA's), (43, 49748),

Gene: Lucia_95 Start: 50497, Stop: 50721, Start Num: 32
Candidate Starts for Lucia_95:
(Start: 32 @50497 has 108 MA's), (43, 50596),

Gene: LunaBlu_98 Start: 53665, Stop: 53889, Start Num: 32
Candidate Starts for LunaBlu_98:
(Start: 32 @53665 has 108 MA's), (43, 53764),

Gene: Madavieve_75 Start: 50134, Stop: 50349, Start Num: 33
Candidate Starts for Madavieve_75:
(6, 49528), (7, 49543), (9, 49753), (10, 49759), (11, 49765), (14, 49867), (18, 50023), (23, 50038), (27, 50071), (Start: 33 @50134 has 8 MA's), (40, 50209), (44, 50236),

Gene: Madiba_93 Start: 52090, Stop: 52314, Start Num: 32
Candidate Starts for Madiba_93:
(Start: 32 @52090 has 108 MA's), (43, 52189),

Gene: MagicMan_69 Start: 46923, Stop: 47171, Start Num: 32
Candidate Starts for MagicMan_69:
(Start: 26 @46860 has 2 MA's), (Start: 32 @46923 has 108 MA's), (42, 47019), (47, 47079), (48, 47082),

Gene: Mahavrat_90 Start: 50730, Stop: 50954, Start Num: 32
Candidate Starts for Mahavrat_90:
(Start: 32 @50730 has 108 MA's), (43, 50829),

Gene: Marteena_76 Start: 49557, Stop: 49772, Start Num: 33

Candidate Starts for Marteena_76:

(6, 48948), (7, 48963), (8, 48993), (9, 49176), (10, 49182), (11, 49188), (14, 49290), (18, 49446), (22, 49455), (23, 49461), (27, 49494), (30, 49521), (Start: 33 @49557 has 8 MA's), (44, 49659),

Gene: Mcklovin_74 Start: 51595, Stop: 51810, Start Num: 33

Candidate Starts for Mcklovin_74:

(6, 50989), (7, 51004), (10, 51220), (11, 51226), (14, 51328), (18, 51484), (23, 51499), (27, 51532), (30, 51559), (Start: 33 @51595 has 8 MA's), (44, 51697), (50, 51757),

Gene: Medindi_99 Start: 53851, Stop: 54075, Start Num: 32

Candidate Starts for Medindi_99:

(Start: 32 @53851 has 108 MA's), (43, 53950),

Gene: MilleniumForce_94 Start: 53252, Stop: 53476, Start Num: 32

Candidate Starts for MilleniumForce_94:

(Start: 32 @53252 has 108 MA's), (43, 53351),

Gene: Moonbeam_97 Start: 53630, Stop: 53854, Start Num: 32

Candidate Starts for Moonbeam_97:

(Start: 32 @53630 has 108 MA's), (43, 53729),

Gene: Moonflower_64 Start: 44641, Stop: 44889, Start Num: 32

Candidate Starts for Moonflower_64:

(Start: 20 @44542 has 3 MA's), (Start: 32 @44641 has 108 MA's), (41, 44728), (50, 44833), (52, 44842),

Gene: Ms6_96 Start: 49416, Stop: 49640, Start Num: 32

Candidate Starts for Ms6_96:

(Start: 32 @49416 has 108 MA's), (43, 49515),

Gene: MulchExplorer_94 Start: 52124, Stop: 52348, Start Num: 32

Candidate Starts for MulchExplorer_94:

(Start: 32 @52124 has 108 MA's), (43, 52223),

Gene: NewHope4_99 Start: 51791, Stop: 52015, Start Num: 32

Candidate Starts for NewHope4_99:

(Start: 32 @51791 has 108 MA's), (43, 51890),

Gene: Nimbo_86 Start: 51449, Stop: 51673, Start Num: 32

Candidate Starts for Nimbo_86:

(Start: 32 @51449 has 108 MA's), (43, 51548),

Gene: Nymphadora_79 Start: 51695, Stop: 51910, Start Num: 33

Candidate Starts for Nymphadora_79:

(3, 50861), (5, 50873), (6, 51089), (7, 51104), (8, 51134), (9, 51314), (10, 51320), (11, 51326), (14, 51428), (18, 51584), (23, 51599), (27, 51632), (Start: 33 @51695 has 8 MA's), (40, 51770), (42, 51785), (44, 51797),

Gene: Ogopogo_99 Start: 52090, Stop: 52314, Start Num: 31

Candidate Starts for Ogopogo_99:

(Start: 31 @52090 has 2 MA's),

Gene: OldBen_91 Start: 52841, Stop: 53065, Start Num: 32

Candidate Starts for OldBen_91:

(Start: 32 @52841 has 108 MA's), (43, 52940),

Gene: Opie_72 Start: 47038, Stop: 47286, Start Num: 32

Candidate Starts for Opie_72:

(Start: 26 @46975 has 2 MA's), (Start: 32 @47038 has 108 MA's), (42, 47134), (47, 47194), (48, 47197),

Gene: Oregano_74 Start: 45625, Stop: 45852, Start Num: 35

Candidate Starts for Oregano_74:

(Start: 35 @45625 has 4 MA's), (37, 45631),

Gene: Ovechkin_98 Start: 53678, Stop: 53902, Start Num: 32

Candidate Starts for Ovechkin_98:

(Start: 32 @53678 has 108 MA's), (43, 53777),

Gene: PHappiness_94 Start: 53670, Stop: 53894, Start Num: 32

Candidate Starts for PHappiness_94:

(Start: 32 @53670 has 108 MA's), (43, 53769),

Gene: PMC_93 Start: 51819, Stop: 52043, Start Num: 32

Candidate Starts for PMC_93:

(Start: 32 @51819 has 108 MA's), (43, 51918),

Gene: Peridot_97 Start: 53192, Stop: 53416, Start Num: 32

Candidate Starts for Peridot_97:

(Start: 32 @53192 has 108 MA's), (43, 53291),

Gene: Phalconet_95 Start: 52818, Stop: 53042, Start Num: 32

Candidate Starts for Phalconet_95:

(Start: 32 @52818 has 108 MA's), (43, 52917),

Gene: Phatniss_92 Start: 52150, Stop: 52374, Start Num: 32

Candidate Starts for Phatniss_92:

(Start: 32 @52150 has 108 MA's), (43, 52249),

Gene: PhesterPhotato_98 Start: 52792, Stop: 53016, Start Num: 32

Candidate Starts for PhesterPhotato_98:

(Start: 32 @52792 has 108 MA's), (43, 52891),

Gene: PhlipPhlop_84 Start: 54212, Stop: 54436, Start Num: 32

Candidate Starts for PhlipPhlop_84:

(Start: 32 @54212 has 108 MA's), (43, 54311),

Gene: PhriskyACE_70 Start: 45620, Stop: 45835, Start Num: 33

Candidate Starts for PhriskyACE_70:

(1, 44648), (6, 45011), (7, 45026), (9, 45239), (10, 45245), (11, 45251), (14, 45353), (15, 45368), (18, 45509), (23, 45524), (27, 45557), (30, 45584), (Start: 33 @45620 has 8 MA's), (44, 45722), (50, 45782),

Gene: Poenanya_98 Start: 54376, Stop: 54600, Start Num: 32

Candidate Starts for Poenanya_98:

(Start: 32 @54376 has 108 MA's), (43, 54475),

Gene: Polka14_98 Start: 54437, Stop: 54661, Start Num: 32

Candidate Starts for Polka14_98:

(Start: 32 @54437 has 108 MA's), (43, 54536),

Gene: Pollux_80 Start: 51514, Stop: 51729, Start Num: 33

Candidate Starts for Pollux_80:

(6, 50905), (7, 50920), (8, 50950), (9, 51133), (10, 51139), (11, 51145), (14, 51247), (18, 51403), (22, 51412), (23, 51418), (27, 51451), (30, 51478), (Start: 33 @51514 has 8 MA's), (44, 51616),

Gene: Polo2Bam_103 Start: 51645, Stop: 51869, Start Num: 32

Candidate Starts for Polo2Bam_103:

(Start: 32 @51645 has 108 MA's), (43, 51744),

Gene: Powerball_71 Start: 45724, Stop: 45951, Start Num: 35

Candidate Starts for Powerball_71:

(Start: 35 @45724 has 4 MA's), (37, 45730), (40, 45787), (50, 45874),

Gene: QuickMath_95 Start: 52705, Stop: 52929, Start Num: 32

Candidate Starts for QuickMath_95:

(Start: 32 @52705 has 108 MA's), (43, 52804),

Gene: Quico_103 Start: 54680, Stop: 54904, Start Num: 32

Candidate Starts for Quico_103:

(Start: 32 @54680 has 108 MA's), (43, 54779),

Gene: REQ2_81 Start: 47996, Stop: 48220, Start Num: 32

Candidate Starts for REQ2_81:

(12, 47633), (17, 47882), (25, 47927), (Start: 32 @47996 has 108 MA's),

Gene: Ramsey_99 Start: 54678, Stop: 54902, Start Num: 32

Candidate Starts for Ramsey_99:

(Start: 32 @54678 has 108 MA's), (43, 54777),

Gene: RayTheFireFly_72 Start: 45008, Stop: 45355, Start Num: 20

Candidate Starts for RayTheFireFly_72:

(Start: 20 @45008 has 3 MA's), (Start: 32 @45107 has 108 MA's), (52, 45308), (54, 45335),

Gene: RedBird_95 Start: 54415, Stop: 54639, Start Num: 32

Candidate Starts for RedBird_95:

(Start: 32 @54415 has 108 MA's), (43, 54514),

Gene: RitaG_93 Start: 53472, Stop: 53696, Start Num: 32

Candidate Starts for RitaG_93:

(Start: 32 @53472 has 108 MA's), (43, 53571),

Gene: Rockne_97 Start: 51831, Stop: 52055, Start Num: 32

Candidate Starts for Rockne_97:

(Start: 32 @51831 has 108 MA's), (43, 51930),

Gene: RockyHorror_98 Start: 52582, Stop: 52806, Start Num: 32

Candidate Starts for RockyHorror_98:

(Start: 32 @52582 has 108 MA's), (43, 52681),

Gene: Royals2015_97 Start: 51702, Stop: 51926, Start Num: 32

Candidate Starts for Royals2015_97:

(Start: 32 @51702 has 108 MA's), (43, 51801),

Gene: Sassafras_96 Start: 52732, Stop: 52956, Start Num: 32

Candidate Starts for Sassafras_96:

(Start: 32 @52732 has 108 MA's), (43, 52831),

Gene: Schnabeltier_70 Start: 46220, Stop: 46468, Start Num: 32

Candidate Starts for Schnabeltier_70:

(Start: 26 @46157 has 2 MA's), (Start: 32 @46220 has 108 MA's), (42, 46316), (47, 46376), (48, 46379),

Gene: Scottish_94 Start: 52309, Stop: 52533, Start Num: 32

Candidate Starts for Scottish_94:

(Start: 32 @52309 has 108 MA's), (43, 52408),

Gene: SeaLumen_100 Start: 51645, Stop: 51869, Start Num: 32

Candidate Starts for SeaLumen_100:

(Start: 32 @51645 has 108 MA's), (43, 51744),

Gene: Seagreen_95 Start: 53324, Stop: 53548, Start Num: 32

Candidate Starts for Seagreen_95:

(Start: 32 @53324 has 108 MA's), (43, 53423),

Gene: SimranZ1_90 Start: 51204, Stop: 51428, Start Num: 32

Candidate Starts for SimranZ1_90:

(Start: 32 @51204 has 108 MA's), (43, 51303),

Gene: Slim_97 Start: 52975, Stop: 53199, Start Num: 32

Candidate Starts for Slim_97:

(Start: 32 @52975 has 108 MA's), (43, 53074),

Gene: Spikelee_95 Start: 54476, Stop: 54700, Start Num: 32

Candidate Starts for Spikelee_95:

(Start: 32 @54476 has 108 MA's), (43, 54575),

Gene: Squirty_94 Start: 56513, Stop: 56737, Start Num: 32

Candidate Starts for Squirty_94:

(Start: 32 @56513 has 108 MA's), (43, 56612),

Gene: StAnnes_98 Start: 54237, Stop: 54461, Start Num: 32

Candidate Starts for StAnnes_98:

(Start: 32 @54237 has 108 MA's), (43, 54336),

Gene: Stap_89 Start: 49963, Stop: 50187, Start Num: 32

Candidate Starts for Stap_89:

(Start: 32 @49963 has 108 MA's), (43, 50062),

Gene: Starcevich_96 Start: 54084, Stop: 54308, Start Num: 32

Candidate Starts for Starcevich_96:

(Start: 32 @54084 has 108 MA's), (43, 54183),

Gene: Suerte_69 Start: 45335, Stop: 45562, Start Num: 35

Candidate Starts for Suerte_69:

(Start: 35 @45335 has 4 MA's), (37, 45341),

Gene: Taj_101 Start: 54398, Stop: 54622, Start Num: 32

Candidate Starts for Taj_101:

(Start: 32 @54398 has 108 MA's), (43, 54497),

Gene: TaronosaurusRx_74 Start: 46596, Stop: 46844, Start Num: 32

Candidate Starts for TaronosaurusRx_74:

(19, 46488), (21, 46491), (24, 46509), (29, 46557), (Start: 32 @46596 has 108 MA's), (40, 46677), (42, 46692), (47, 46752), (48, 46755),

Gene: Tuti_75 Start: 46628, Stop: 46843, Start Num: 33

Candidate Starts for Tuti_75:

(10, 46253), (11, 46259), (13, 46325), (14, 46361), (18, 46517), (23, 46532), (27, 46565), (30, 46592), (Start: 33 @46628 has 8 MA's), (42, 46718), (44, 46730), (50, 46790),

Gene: Tweety_95 Start: 53662, Stop: 53886, Start Num: 32

Candidate Starts for Tweety_95:

(Start: 32 @53662 has 108 MA's), (43, 53761),

Gene: UncleRicky_94 Start: 51705, Stop: 51929, Start Num: 32

Candidate Starts for UncleRicky_94:

(Start: 32 @51705 has 108 MA's), (43, 51804),

Gene: VRedHorse_95 Start: 50521, Stop: 50745, Start Num: 32

Candidate Starts for VRedHorse_95:

(Start: 32 @50521 has 108 MA's), (43, 50620),

Gene: Violac_96 Start: 54054, Stop: 54278, Start Num: 32

Candidate Starts for Violac_96:

(Start: 32 @54054 has 108 MA's), (43, 54153),

Gene: Vivum_92 Start: 54308, Stop: 54532, Start Num: 32

Candidate Starts for Vivum_92:

(Start: 32 @54308 has 108 MA's), (43, 54407),

Gene: Vulpecula_63 Start: 36929, Stop: 37147, Start Num: 34

Candidate Starts for Vulpecula_63:

(Start: 34 @36929 has 1 MA's), (36, 36935), (38, 36962), (39, 36971), (45, 37034), (49, 37073), (52, 37091), (53, 37112),

Gene: Wachhund_92 Start: 49757, Stop: 49981, Start Num: 32

Candidate Starts for Wachhund_92:

(Start: 32 @49757 has 108 MA's), (43, 49856),

Gene: Wee_98 Start: 54474, Stop: 54698, Start Num: 32

Candidate Starts for Wee_98:

(Start: 32 @54474 has 108 MA's), (43, 54573),

Gene: WillSterrel_92 Start: 53037, Stop: 53261, Start Num: 32

Candidate Starts for WillSterrel_92:

(Start: 32 @53037 has 108 MA's), (43, 53136),

Gene: XFactor_85 Start: 50787, Stop: 51011, Start Num: 32

Candidate Starts for XFactor_85:

(Start: 32 @50787 has 108 MA's), (43, 50886),

Gene: ZAYM_75 Start: 46437, Stop: 46685, Start Num: 32

Candidate Starts for ZAYM_75:

(Start: 26 @46371 has 2 MA's), (Start: 32 @46437 has 108 MA's), (40, 46518), (42, 46533), (47, 46593), (48, 46596),