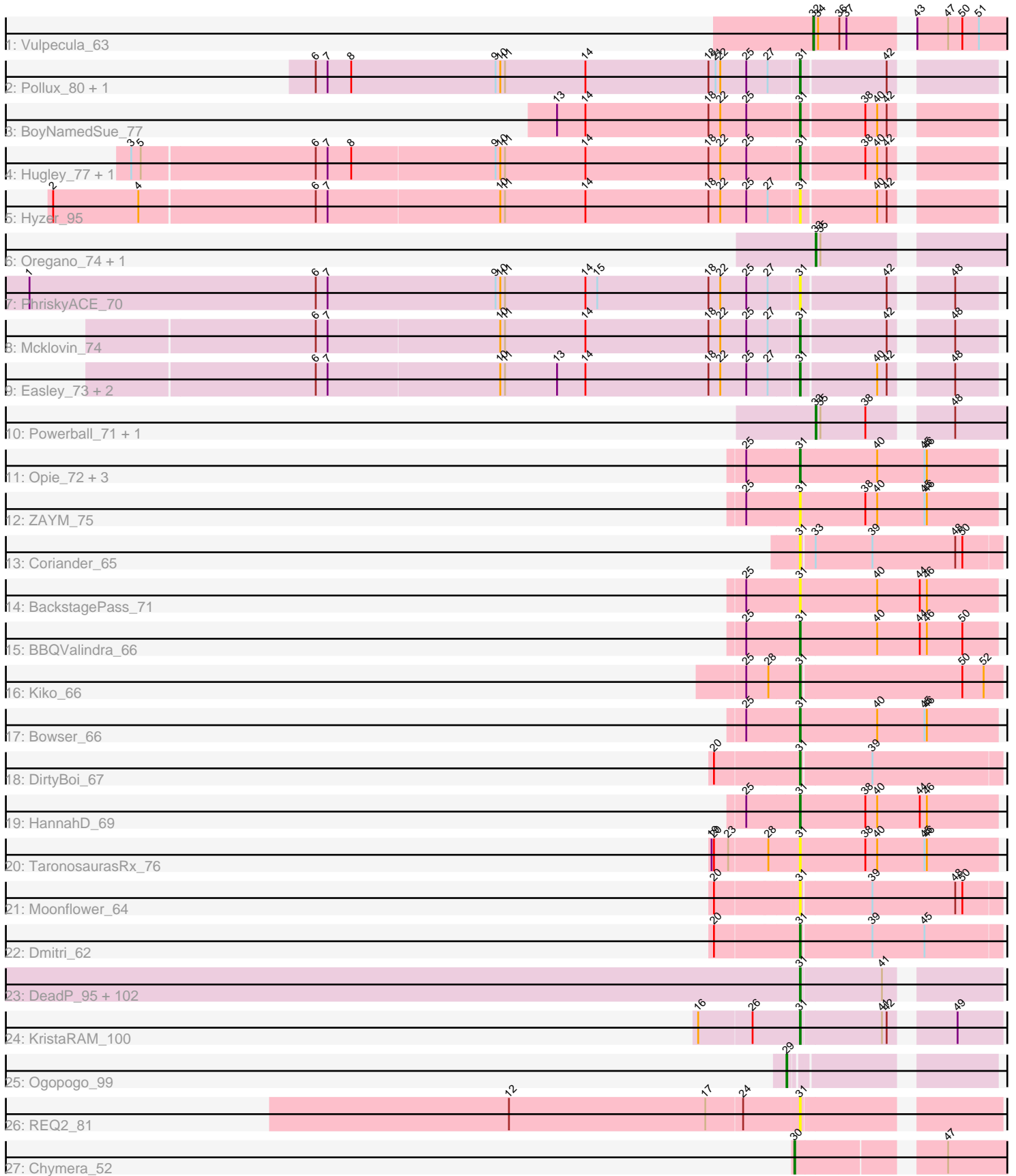


Pham 214083



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 214083 Report

This analysis was run 02/22/25 on database version 588.

Pham number 214083 has 138 members, 27 are drafts.

Phages represented in each track:

- Track 1 : Vulpecula_63
- Track 2 : Pollux_80, Marteena_76
- Track 3 : BoyNamedSue_77
- Track 4 : Hugley_77, Nymphadora_79
- Track 5 : Hyzer_95
- Track 6 : Oregano_74, Suerte_69
- Track 7 : PhriskyACE_70
- Track 8 : Mcklovin_74
- Track 9 : Easley_73, Beenie_69, Invectra_76
- Track 10 : Powerball_71, Dorito_69
- Track 11 : Opie_72, Eyes_64, MagicMan_69, Schnabeltier_70
- Track 12 : ZAYM_75
- Track 13 : Coriander_65
- Track 14 : BackstagePass_71
- Track 15 : BBQValindra_66
- Track 16 : Kiko_66
- Track 17 : Bowser_66
- Track 18 : DirtyBoi_67
- Track 19 : HannahD_69
- Track 20 : TaronosaurusRx_76
- Track 21 : Moonflower_64
- Track 22 : Dmitri_62
- Track 23 : DeadP_95, Wachhund_92, Geralt_87, Madiba_93, RitaG_93, Kenuha5_87, BuzzLyseyear_101, Royals2015_97, Eish_100, BodEinwohner17_104, Spikelee_95, GigiOuiOui_89, IMpilo_92, MulchExplorer_98, DoRead_101, Galactic_95, Mahavrat_90, WillSterrel_92, IbOuu_89, DaddyRickover_96, Juice456_93, Tweety_95, Inventum_92, Ms6_96, Hamulus_95, PhlipPhlop_83, Phalconet_95, Slim_94, Wee_98, Ovechkin_98, Boomer_97, Florinda_106, Polka14_98, DirtMcgirt_95, Doomphist_99, Seagreen_95, Squirty_94, IrishSherpFalk_94, Harley_97, Byougenkin_92, Empress_94, Ardmore_79, UncleRicky_94, LittleShirley_102, Fastidio_98, KingMidas_94, Dorothy_95, Lorde_97, Phatniss_92, Deb65_87, Emma_99, Violac_99, Leperchaun_96, PMC_93, Girafales_103, Poenanya_98, Polo2Bam_103, RockyHorror_98, Nimbo_86, Enby_98, Hades_91, Vivum_94, Sassafras_96, Moonbeam_97, Ibhuesi_92, Hegedechwinu_101, RedBird_95, Ramsey_99, Taj_101, MilleniumForce_94, Scottish_94, Juniper1_88, JoeyJr_97, Filuzino_94, Kimberlium_96, OldBen_91, Emmaloid_94, SimranZ1_90, DLane_94, GUmbie_93, Starcevich_96, DaWorst_94,

XFactor_85, Cornucopia_94, Daenerys_92, Drago_93, Jant_100, Rockne_97, CaptainTrips_96, NewHope4_95, PHappiness_94, VRedHorse_95, Quico_103, EmiMonkey_83, LunaBlu_98, Stap_89, DotProduct_88, Fruitloop_92, StAnnes_98, Grimmer_103, Estave1_102, PhesterPhotato_98, QuickMath_95

- Track 24 : KristaRAM_100
- Track 25 : Ogopogo_99
- Track 26 : REQ2_81
- Track 27 : 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 31, it was called in 104 of the 111 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ardmore_79, BBQValindra_66, BackstagePass_71, Beenie_69, BodEinwohner17_104, Boomer_97, Bowser_66, BoyNamedSue_77, 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_101, Doomphist_99, Dorothy_95, DotProduct_88, Drago_93, Easley_73, Eish_100, EmiMonkey_83, Emma_99, Emmaloid_94, Empress_94, Enby_98, Estave1_102, Eyes_64, Fastidio_98, Filuzino_94, Florinda_106, Fruitloop_92, GUmble_93, Galactic_95, Geralt_87, GigiOuiOui_89, Girafales_103, Grimmer_103, Hades_91, Hamulus_95, HannahD_69, Harley_97, Hegedechwinu_101, Hugley_77, Hyzer_95, IMpilo_92, IbOuu_89, Ibhubesi_92, Invectra_76, 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, LunaBlu_98, Madiba_93, MagicMan_69, Mahavrat_90, Marteena_76, Mcklovin_74, MilleniumForce_94, Moonbeam_97, Moonflower_64, Ms6_96, MulchExplorer_98, NewHope4_95, Nimbo_86, Nymphadora_79, OldBen_91, Opie_72, Ovechkin_98, PHappiness_94, PMC_93, Phalconet_95, Phatniss_92, PhesterPhotato_98, PhilipPhlop_83, PhriskyACE_70, Poenanya_98, Polka14_98, Pollux_80, 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, Seagreen_95, SimranZ1_90, Slim_94, Spikelee_95, Squirty_94, StAnnes_98, Stap_89, Starcevich_96, Taj_101, TaronosaurusRx_76, Tweety_95, UncleRicky_94, VRedHorse_95, Violac_99, Vivum_94, Wachhund_92, Wee_98, WillSterrel_92, XFactor_85, ZAYM_75,

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

-

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

- Chymera_52, Dorito_69, Ogopogo_99, Oregano_74, Powerball_71, Suerte_69, Vulpecula_63,

Summary by start number:

Start 29:

- Found in 1 of 138 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ogotogo_99 (F1),

Start 30:

- Found in 1 of 138 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chymera_52 (singleton),

Start 31:

- Found in 131 of 138 (94.9%) of genes in pham
- Manual Annotations of this start: 104 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ardmore_79 (F1), BBQValindra_66 (DB), BackstagePass_71 (DB), Beenie_69 (CZ4), BodEinwohner17_104 (F1), Boomer_97 (F1), Bowser_66 (DB), BoyNamedSue_77 (CZ1), 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_101 (F1), Doomphist_99 (F1), Dorothy_95 (F1), DotProduct_88 (F1), Drago_93 (F1), Easley_73 (CZ4), Eish_100 (F1), EmiMonkey_83 (F1), Emma_99 (F1), Emmaloid_94 (F1), Empress_94 (F1), Enby_98 (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), Hugley_77 (CZ1), Hyzer_95 (CZ1), IMpilo_92 (F1), IbOuu_89 (F1), Ibhubesi_92 (F1), Investra_76 (CZ4), Invention_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), LunaBlu_98 (F1), Madiba_93 (F1), MagicMan_69 (DB), Mahavrat_90 (F1), Marteena_76 (CY1), Mcklovin_74 (CZ4), MilleniumForce_94 (F1), Moonbeam_97 (F1), Moonflower_64 (DB), Ms6_96 (F1), MulchExplorer_98 (F1), NewHope4_95 (F1), Nimbo_86 (F1), Nymphadora_79 (CZ1), OldBen_91 (F1), Opie_72 (DB), Ovechkin_98 (F1), PHappiness_94 (F1), PMC_93 (F1), Phalconet_95 (F1), Phatniss_92 (F1), PhesterPhotato_98 (F1), PhlipPhlop_83 (F1), PhriskyACE_70 (CZ4), Poenanya_98 (F1), Polka14_98 (F1), Pollux_80 (CY1), 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), Seagreen_95 (F1), SimranZ1_90 (F1), Slim_94 (F1), Spikelee_95 (F1), Squirry_94 (F3), StAnnes_98 (F1), Stap_89 (F1), Starcevich_96 (F1), Taj_101 (F1), TaronosaurusRx_76 (DB), Tweety_95 (F1), UncleRicky_94 (F1), VRedHorse_95 (F1), Violac_99 (F1), Vivum_94 (F1), Wachhund_92 (F1), Wee_98 (F1), WillSterrel_92 (F1), XFactor_85 (F1), ZAYM_75 (DB),

Start 32:

- Found in 1 of 138 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Vulpecula_63 (AS1),

Start 33:

- Found in 5 of 138 (3.6%) of genes in pham
- Manual Annotations of this start: 4 of 111
- Called 80.0% 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 32 was manually annotated 1 time for cluster AS1.

Info for manual annotations of cluster CY1:

- Start number 31 was manually annotated 2 times for cluster CY1.

Info for manual annotations of cluster CZ1:

- Start number 31 was manually annotated 2 times for cluster CZ1.

Info for manual annotations of cluster CZ4:

- Start number 31 was manually annotated 3 times for cluster CZ4.
- Start number 33 was manually annotated 4 times for cluster CZ4.

Info for manual annotations of cluster DB:

- Start number 31 was manually annotated 10 times for cluster DB.

Info for manual annotations of cluster F1:

- Start number 29 was manually annotated 1 time for cluster F1.
- Start number 31 was manually annotated 86 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 31 was manually annotated 1 time for cluster F3.

Gene Information:

Gene: Ardmore_79 Start: 47310, Stop: 47534, Start Num: 31

Candidate Starts for Ardmore_79:

(Start: 31 @47310 has 104 MA's), (41, 47409),

Gene: BBQValindra_66 Start: 46200, Stop: 46448, Start Num: 31

Candidate Starts for BBQValindra_66:

(25, 46137), (Start: 31 @46200 has 104 MA's), (40, 46296), (44, 46350), (46, 46359), (50, 46404),

Gene: BackstagePass_71 Start: 45548, Stop: 45796, Start Num: 31

Candidate Starts for BackstagePass_71:

(25, 45485), (Start: 31 @45548 has 104 MA's), (40, 45644), (44, 45698), (46, 45707),

Gene: Beenie_69 Start: 46326, Stop: 46541, Start Num: 31

Candidate Starts for Beenie_69:

(6, 45720), (7, 45735), (10, 45951), (11, 45957), (13, 46023), (14, 46059), (18, 46215), (22, 46230), (25, 46263), (27, 46290), (Start: 31 @46326 has 104 MA's), (40, 46416), (42, 46428), (48, 46488),

Gene: BodEinwohner17_104 Start: 55362, Stop: 55586, Start Num: 31

Candidate Starts for BodEinwohner17_104:

(Start: 31 @55362 has 104 MA's), (41, 55461),

Gene: Boomer_97 Start: 53595, Stop: 53819, Start Num: 31

Candidate Starts for Boomer_97:

(Start: 31 @53595 has 104 MA's), (41, 53694),

Gene: Bowser_66 Start: 45894, Stop: 46142, Start Num: 31

Candidate Starts for Bowser_66:

(25, 45828), (Start: 31 @45894 has 104 MA's), (40, 45990), (45, 46050), (46, 46053),

Gene: BoyNamedSue_77 Start: 50965, Stop: 51180, Start Num: 31

Candidate Starts for BoyNamedSue_77:

(13, 50662), (14, 50698), (18, 50854), (22, 50869), (25, 50902), (Start: 31 @50965 has 104 MA's), (38, 51040), (40, 51055), (42, 51067),

Gene: BuzzLyseyear_101 Start: 55092, Stop: 55316, Start Num: 31

Candidate Starts for BuzzLyseyear_101:

(Start: 31 @55092 has 104 MA's), (41, 55191),

Gene: Byougenkin_92 Start: 49932, Stop: 50156, Start Num: 31

Candidate Starts for Byougenkin_92:

(Start: 31 @49932 has 104 MA's), (41, 50031),

Gene: CaptainTrips_96 Start: 52498, Stop: 52722, Start Num: 31

Candidate Starts for CaptainTrips_96:

(Start: 31 @52498 has 104 MA's), (41, 52597),

Gene: Chymera_52 Start: 33565, Stop: 33825, Start Num: 30

Candidate Starts for Chymera_52:

(Start: 30 @33565 has 1 MA's), (47, 33724),

Gene: Coriander_65 Start: 43545, Stop: 43793, Start Num: 31

Candidate Starts for Coriander_65:

(Start: 31 @43545 has 104 MA's), (Start: 33 @43560 has 4 MA's), (39, 43632), (48, 43737), (50, 43746),

Gene: Cornucopia_94 Start: 50874, Stop: 51098, Start Num: 31

Candidate Starts for Cornucopia_94:

(Start: 31 @50874 has 104 MA's), (41, 50973),

Gene: DLane_94 Start: 53780, Stop: 54004, Start Num: 31

Candidate Starts for DLane_94:

(Start: 31 @53780 has 104 MA's), (41, 53879),

Gene: DaWorst_94 Start: 52690, Stop: 52914, Start Num: 31

Candidate Starts for DaWorst_94:

(Start: 31 @52690 has 104 MA's), (41, 52789),

Gene: DaddyRickover_96 Start: 53556, Stop: 53780, Start Num: 31
Candidate Starts for DaddyRickover_96:
(Start: 31 @53556 has 104 MA's), (41, 53655),

Gene: Daenerys_92 Start: 53725, Stop: 53949, Start Num: 31
Candidate Starts for Daenerys_92:
(Start: 31 @53725 has 104 MA's), (41, 53824),

Gene: DeadP_95 Start: 51561, Stop: 51785, Start Num: 31
Candidate Starts for DeadP_95:
(Start: 31 @51561 has 104 MA's), (41, 51660),

Gene: Deb65_87 Start: 51449, Stop: 51673, Start Num: 31
Candidate Starts for Deb65_87:
(Start: 31 @51449 has 104 MA's), (41, 51548),

Gene: DirtMcgirt_95 Start: 50205, Stop: 50429, Start Num: 31
Candidate Starts for DirtMcgirt_95:
(Start: 31 @50205 has 104 MA's), (41, 50304),

Gene: DirtyBoi_67 Start: 43186, Stop: 43434, Start Num: 31
Candidate Starts for DirtyBoi_67:
(20, 43087), (Start: 31 @43186 has 104 MA's), (39, 43273),

Gene: Dmitri_62 Start: 45089, Stop: 45337, Start Num: 31
Candidate Starts for Dmitri_62:
(20, 44990), (Start: 31 @45089 has 104 MA's), (39, 45176), (45, 45242),

Gene: DoRead_101 Start: 51020, Stop: 51244, Start Num: 31
Candidate Starts for DoRead_101:
(Start: 31 @51020 has 104 MA's), (41, 51119),

Gene: Doomphist_99 Start: 54376, Stop: 54600, Start Num: 31
Candidate Starts for Doomphist_99:
(Start: 31 @54376 has 104 MA's), (41, 54475),

Gene: Dorito_69 Start: 44511, Stop: 44738, Start Num: 33
Candidate Starts for Dorito_69:
(Start: 33 @44511 has 4 MA's), (35, 44517), (38, 44574), (48, 44661),

Gene: Dorothy_95 Start: 54545, Stop: 54769, Start Num: 31
Candidate Starts for Dorothy_95:
(Start: 31 @54545 has 104 MA's), (41, 54644),

Gene: DotProduct_88 Start: 50563, Stop: 50787, Start Num: 31
Candidate Starts for DotProduct_88:
(Start: 31 @50563 has 104 MA's), (41, 50662),

Gene: Drago_93 Start: 50208, Stop: 50432, Start Num: 31
Candidate Starts for Drago_93:
(Start: 31 @50208 has 104 MA's), (41, 50307),

Gene: Easley_73 Start: 45090, Stop: 45305, Start Num: 31
Candidate Starts for Easley_73:
(6, 44484), (7, 44499), (10, 44715), (11, 44721), (13, 44787), (14, 44823), (18, 44979), (22, 44994),
(25, 45027), (27, 45054), (Start: 31 @45090 has 104 MA's), (40, 45180), (42, 45192), (48, 45252),

Gene: Eish_100 Start: 54009, Stop: 54233, Start Num: 31
Candidate Starts for Eish_100:
(Start: 31 @54009 has 104 MA's), (41, 54108),

Gene: EmiMonkey_83 Start: 54212, Stop: 54436, Start Num: 31
Candidate Starts for EmiMonkey_83:
(Start: 31 @54212 has 104 MA's), (41, 54311),

Gene: Emma_99 Start: 52064, Stop: 52288, Start Num: 31
Candidate Starts for Emma_99:
(Start: 31 @52064 has 104 MA's), (41, 52163),

Gene: Emmaloid_94 Start: 52984, Stop: 53208, Start Num: 31
Candidate Starts for Emmaloid_94:
(Start: 31 @52984 has 104 MA's), (41, 53083),

Gene: Empress_94 Start: 52639, Stop: 52863, Start Num: 31
Candidate Starts for Empress_94:
(Start: 31 @52639 has 104 MA's), (41, 52738),

Gene: Enby_98 Start: 50484, Stop: 50708, Start Num: 31
Candidate Starts for Enby_98:
(Start: 31 @50484 has 104 MA's), (41, 50583),

Gene: Estave1_102 Start: 56371, Stop: 56595, Start Num: 31
Candidate Starts for Estave1_102:
(Start: 31 @56371 has 104 MA's), (41, 56470),

Gene: Eyes_64 Start: 46097, Stop: 46345, Start Num: 31
Candidate Starts for Eyes_64:
(25, 46034), (Start: 31 @46097 has 104 MA's), (40, 46193), (45, 46253), (46, 46256),

Gene: Fastidio_98 Start: 50955, Stop: 51179, Start Num: 31
Candidate Starts for Fastidio_98:
(Start: 31 @50955 has 104 MA's), (41, 51054),

Gene: Filuzino_94 Start: 54475, Stop: 54699, Start Num: 31
Candidate Starts for Filuzino_94:
(Start: 31 @54475 has 104 MA's), (41, 54574),

Gene: Florinda_106 Start: 54860, Stop: 55084, Start Num: 31
Candidate Starts for Florinda_106:
(Start: 31 @54860 has 104 MA's), (41, 54959),

Gene: Fruitloop_92 Start: 53617, Stop: 53841, Start Num: 31
Candidate Starts for Fruitloop_92:
(Start: 31 @53617 has 104 MA's), (41, 53716),

Gene: GUmbie_93 Start: 52577, Stop: 52801, Start Num: 31
Candidate Starts for GUmbie_93:
(Start: 31 @52577 has 104 MA's), (41, 52676),

Gene: Galactic_95 Start: 52179, Stop: 52403, Start Num: 31
Candidate Starts for Galactic_95:
(Start: 31 @52179 has 104 MA's), (41, 52278),

Gene: Geralt_87 Start: 51447, Stop: 51671, Start Num: 31
Candidate Starts for Geralt_87:
(Start: 31 @51447 has 104 MA's), (41, 51546),

Gene: GigiOuiOui_89 Start: 51580, Stop: 51804, Start Num: 31
Candidate Starts for GigiOuiOui_89:
(Start: 31 @51580 has 104 MA's), (41, 51679),

Gene: Girafales_103 Start: 54465, Stop: 54689, Start Num: 31
Candidate Starts for Girafales_103:
(Start: 31 @54465 has 104 MA's), (41, 54564),

Gene: Grimmer_103 Start: 53161, Stop: 53385, Start Num: 31
Candidate Starts for Grimmer_103:
(Start: 31 @53161 has 104 MA's), (41, 53260),

Gene: Hades_91 Start: 50166, Stop: 50390, Start Num: 31
Candidate Starts for Hades_91:
(Start: 31 @50166 has 104 MA's), (41, 50265),

Gene: Hamulus_95 Start: 52528, Stop: 52752, Start Num: 31
Candidate Starts for Hamulus_95:
(Start: 31 @52528 has 104 MA's), (41, 52627),

Gene: HannahD_69 Start: 45420, Stop: 45668, Start Num: 31
Candidate Starts for HannahD_69:
(25, 45357), (Start: 31 @45420 has 104 MA's), (38, 45501), (40, 45516), (44, 45570), (46, 45579),

Gene: Harley_97 Start: 53710, Stop: 53934, Start Num: 31
Candidate Starts for Harley_97:
(Start: 31 @53710 has 104 MA's), (41, 53809),

Gene: Hegedechwinu_101 Start: 52838, Stop: 53062, Start Num: 31
Candidate Starts for Hegedechwinu_101:
(Start: 31 @52838 has 104 MA's), (41, 52937),

Gene: Hugley_77 Start: 52070, Stop: 52285, Start Num: 31
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), (22, 51974), (25, 52007), (Start: 31 @52070 has 104 MA's), (38, 52145), (40, 52160), (42, 52172),

Gene: Hyzer_95 Start: 58740, Stop: 58955, Start Num: 31
Candidate Starts for Hyzer_95:

(2, 57807), (4, 57915), (6, 58134), (7, 58149), (10, 58365), (11, 58371), (14, 58473), (18, 58629), (22, 58644), (25, 58677), (27, 58704), (Start: 31 @58740 has 104 MA's), (40, 58830), (42, 58842),

Gene: IMpilo_92 Start: 51182, Stop: 51406, Start Num: 31
Candidate Starts for IMpilo_92:
(Start: 31 @51182 has 104 MA's), (41, 51281),

Gene: IbOuu_89 Start: 50477, Stop: 50701, Start Num: 31
Candidate Starts for IbOuu_89:
(Start: 31 @50477 has 104 MA's), (41, 50576),

Gene: Ibhubesi_92 Start: 50579, Stop: 50803, Start Num: 31
Candidate Starts for Ibhubesi_92:
(Start: 31 @50579 has 104 MA's), (41, 50678),

Gene: Invectra_76 Start: 47662, Stop: 47877, Start Num: 31
Candidate Starts for Invectra_76:
(6, 47056), (7, 47071), (10, 47287), (11, 47293), (13, 47359), (14, 47395), (18, 47551), (22, 47566), (25, 47599), (27, 47626), (Start: 31 @47662 has 104 MA's), (40, 47752), (42, 47764), (48, 47824),

Gene: Inventum_92 Start: 52733, Stop: 52957, Start Num: 31
Candidate Starts for Inventum_92:
(Start: 31 @52733 has 104 MA's), (41, 52832),

Gene: IrishSherpFalk_94 Start: 53004, Stop: 53228, Start Num: 31
Candidate Starts for IrishSherpFalk_94:
(Start: 31 @53004 has 104 MA's), (41, 53103),

Gene: Jant_100 Start: 52288, Stop: 52512, Start Num: 31
Candidate Starts for Jant_100:
(Start: 31 @52288 has 104 MA's), (41, 52387),

Gene: JoeyJr_97 Start: 54641, Stop: 54865, Start Num: 31
Candidate Starts for JoeyJr_97:
(Start: 31 @54641 has 104 MA's), (41, 54740),

Gene: Juice456_93 Start: 52353, Stop: 52577, Start Num: 31
Candidate Starts for Juice456_93:
(Start: 31 @52353 has 104 MA's), (41, 52452),

Gene: Juniper1_88 Start: 51701, Stop: 51925, Start Num: 31
Candidate Starts for Juniper1_88:
(Start: 31 @51701 has 104 MA's), (41, 51800),

Gene: Kenuha5_87 Start: 52359, Stop: 52583, Start Num: 31
Candidate Starts for Kenuha5_87:
(Start: 31 @52359 has 104 MA's), (41, 52458),

Gene: Kiko_66 Start: 43613, Stop: 43864, Start Num: 31
Candidate Starts for Kiko_66:
(25, 43550), (28, 43577), (Start: 31 @43613 has 104 MA's), (50, 43814), (52, 43841),

Gene: Kimberlium_96 Start: 52453, Stop: 52677, Start Num: 31

Candidate Starts for Kimberlium_96:
(Start: 31 @52453 has 104 MA's), (41, 52552),

Gene: KingMidas_94 Start: 52870, Stop: 53094, Start Num: 31
Candidate Starts for KingMidas_94:
(Start: 31 @52870 has 104 MA's), (41, 52969),

Gene: KristaRAM_100 Start: 53831, Stop: 54055, Start Num: 31
Candidate Starts for KristaRAM_100:
(16, 53708), (26, 53774), (Start: 31 @53831 has 104 MA's), (41, 53930), (42, 53936), (49, 53999),

Gene: Leperchaun_96 Start: 53875, Stop: 54099, Start Num: 31
Candidate Starts for Leperchaun_96:
(Start: 31 @53875 has 104 MA's), (41, 53974),

Gene: LittleShirley_102 Start: 54183, Stop: 54407, Start Num: 31
Candidate Starts for LittleShirley_102:
(Start: 31 @54183 has 104 MA's), (41, 54282),

Gene: Lorde_97 Start: 49649, Stop: 49873, Start Num: 31
Candidate Starts for Lorde_97:
(Start: 31 @49649 has 104 MA's), (41, 49748),

Gene: LunaBlu_98 Start: 53665, Stop: 53889, Start Num: 31
Candidate Starts for LunaBlu_98:
(Start: 31 @53665 has 104 MA's), (41, 53764),

Gene: Madiba_93 Start: 52090, Stop: 52314, Start Num: 31
Candidate Starts for Madiba_93:
(Start: 31 @52090 has 104 MA's), (41, 52189),

Gene: MagicMan_69 Start: 46923, Stop: 47171, Start Num: 31
Candidate Starts for MagicMan_69:
(25, 46860), (Start: 31 @46923 has 104 MA's), (40, 47019), (45, 47079), (46, 47082),

Gene: Mahavrat_90 Start: 50730, Stop: 50954, Start Num: 31
Candidate Starts for Mahavrat_90:
(Start: 31 @50730 has 104 MA's), (41, 50829),

Gene: Marteena_76 Start: 49557, Stop: 49772, Start Num: 31
Candidate Starts for Marteena_76:
(6, 48948), (7, 48963), (8, 48993), (9, 49176), (10, 49182), (11, 49188), (14, 49290), (18, 49446), (21, 49455), (22, 49461), (25, 49494), (27, 49521), (Start: 31 @49557 has 104 MA's), (42, 49659),

Gene: Mcklovin_74 Start: 51595, Stop: 51810, Start Num: 31
Candidate Starts for Mcklovin_74:
(6, 50989), (7, 51004), (10, 51220), (11, 51226), (14, 51328), (18, 51484), (22, 51499), (25, 51532), (27, 51559), (Start: 31 @51595 has 104 MA's), (42, 51697), (48, 51757),

Gene: MilleniumForce_94 Start: 53252, Stop: 53476, Start Num: 31
Candidate Starts for MilleniumForce_94:
(Start: 31 @53252 has 104 MA's), (41, 53351),

Gene: Moonbeam_97 Start: 53630, Stop: 53854, Start Num: 31
Candidate Starts for Moonbeam_97:
(Start: 31 @53630 has 104 MA's), (41, 53729),

Gene: Moonflower_64 Start: 44641, Stop: 44889, Start Num: 31
Candidate Starts for Moonflower_64:
(20, 44542), (Start: 31 @44641 has 104 MA's), (39, 44728), (48, 44833), (50, 44842),

Gene: Ms6_96 Start: 49416, Stop: 49640, Start Num: 31
Candidate Starts for Ms6_96:
(Start: 31 @49416 has 104 MA's), (41, 49515),

Gene: MulchExplorer_98 Start: 52124, Stop: 52348, Start Num: 31
Candidate Starts for MulchExplorer_98:
(Start: 31 @52124 has 104 MA's), (41, 52223),

Gene: NewHope4_95 Start: 51791, Stop: 52015, Start Num: 31
Candidate Starts for NewHope4_95:
(Start: 31 @51791 has 104 MA's), (41, 51890),

Gene: Nimbo_86 Start: 51449, Stop: 51673, Start Num: 31
Candidate Starts for Nimbo_86:
(Start: 31 @51449 has 104 MA's), (41, 51548),

Gene: Nymphadora_79 Start: 51695, Stop: 51910, Start Num: 31
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), (22, 51599), (25, 51632), (Start: 31 @51695 has 104 MA's), (38, 51770), (40, 51785), (42, 51797),

Gene: Ogotogo_99 Start: 52090, Stop: 52314, Start Num: 29
Candidate Starts for Ogotogo_99:
(Start: 29 @52090 has 1 MA's),

Gene: OldBen_91 Start: 52841, Stop: 53065, Start Num: 31
Candidate Starts for OldBen_91:
(Start: 31 @52841 has 104 MA's), (41, 52940),

Gene: Opie_72 Start: 47038, Stop: 47286, Start Num: 31
Candidate Starts for Opie_72:
(25, 46975), (Start: 31 @47038 has 104 MA's), (40, 47134), (45, 47194), (46, 47197),

Gene: Oregano_74 Start: 45625, Stop: 45852, Start Num: 33
Candidate Starts for Oregano_74:
(Start: 33 @45625 has 4 MA's), (35, 45631),

Gene: Ovechkin_98 Start: 53678, Stop: 53902, Start Num: 31
Candidate Starts for Ovechkin_98:
(Start: 31 @53678 has 104 MA's), (41, 53777),

Gene: PHappiness_94 Start: 53670, Stop: 53894, Start Num: 31
Candidate Starts for PHappiness_94:
(Start: 31 @53670 has 104 MA's), (41, 53769),

Gene: PMC_93 Start: 51819, Stop: 52043, Start Num: 31

Candidate Starts for PMC_93:

(Start: 31 @51819 has 104 MA's), (41, 51918),

Gene: Phalconet_95 Start: 52818, Stop: 53042, Start Num: 31

Candidate Starts for Phalconet_95:

(Start: 31 @52818 has 104 MA's), (41, 52917),

Gene: Phatniss_92 Start: 52150, Stop: 52374, Start Num: 31

Candidate Starts for Phatniss_92:

(Start: 31 @52150 has 104 MA's), (41, 52249),

Gene: PhesterPhotato_98 Start: 52792, Stop: 53016, Start Num: 31

Candidate Starts for PhesterPhotato_98:

(Start: 31 @52792 has 104 MA's), (41, 52891),

Gene: PhlipPhlop_83 Start: 54212, Stop: 54436, Start Num: 31

Candidate Starts for PhlipPhlop_83:

(Start: 31 @54212 has 104 MA's), (41, 54311),

Gene: PhriskyACE_70 Start: 45620, Stop: 45835, Start Num: 31

Candidate Starts for PhriskyACE_70:

(1, 44648), (6, 45011), (7, 45026), (9, 45239), (10, 45245), (11, 45251), (14, 45353), (15, 45368), (18, 45509), (22, 45524), (25, 45557), (27, 45584), (Start: 31 @45620 has 104 MA's), (42, 45722), (48, 45782),

Gene: Poenanya_98 Start: 54376, Stop: 54600, Start Num: 31

Candidate Starts for Poenanya_98:

(Start: 31 @54376 has 104 MA's), (41, 54475),

Gene: Polka14_98 Start: 54437, Stop: 54661, Start Num: 31

Candidate Starts for Polka14_98:

(Start: 31 @54437 has 104 MA's), (41, 54536),

Gene: Pollux_80 Start: 51514, Stop: 51729, Start Num: 31

Candidate Starts for Pollux_80:

(6, 50905), (7, 50920), (8, 50950), (9, 51133), (10, 51139), (11, 51145), (14, 51247), (18, 51403), (21, 51412), (22, 51418), (25, 51451), (27, 51478), (Start: 31 @51514 has 104 MA's), (42, 51616),

Gene: Polo2Bam_103 Start: 51645, Stop: 51869, Start Num: 31

Candidate Starts for Polo2Bam_103:

(Start: 31 @51645 has 104 MA's), (41, 51744),

Gene: Powerball_71 Start: 45724, Stop: 45951, Start Num: 33

Candidate Starts for Powerball_71:

(Start: 33 @45724 has 4 MA's), (35, 45730), (38, 45787), (48, 45874),

Gene: QuickMath_95 Start: 52705, Stop: 52929, Start Num: 31

Candidate Starts for QuickMath_95:

(Start: 31 @52705 has 104 MA's), (41, 52804),

Gene: Quico_103 Start: 54680, Stop: 54904, Start Num: 31

Candidate Starts for Quico_103:
(Start: 31 @54680 has 104 MA's), (41, 54779),

Gene: REQ2_81 Start: 47996, Stop: 48220, Start Num: 31
Candidate Starts for REQ2_81:
(12, 47633), (17, 47882), (24, 47927), (Start: 31 @47996 has 104 MA's),

Gene: Ramsey_99 Start: 54678, Stop: 54902, Start Num: 31
Candidate Starts for Ramsey_99:
(Start: 31 @54678 has 104 MA's), (41, 54777),

Gene: RedBird_95 Start: 54415, Stop: 54639, Start Num: 31
Candidate Starts for RedBird_95:
(Start: 31 @54415 has 104 MA's), (41, 54514),

Gene: RitaG_93 Start: 53472, Stop: 53696, Start Num: 31
Candidate Starts for RitaG_93:
(Start: 31 @53472 has 104 MA's), (41, 53571),

Gene: Rockne_97 Start: 51831, Stop: 52055, Start Num: 31
Candidate Starts for Rockne_97:
(Start: 31 @51831 has 104 MA's), (41, 51930),

Gene: RockyHorror_98 Start: 52582, Stop: 52806, Start Num: 31
Candidate Starts for RockyHorror_98:
(Start: 31 @52582 has 104 MA's), (41, 52681),

Gene: Royals2015_97 Start: 51702, Stop: 51926, Start Num: 31
Candidate Starts for Royals2015_97:
(Start: 31 @51702 has 104 MA's), (41, 51801),

Gene: Sassafras_96 Start: 52732, Stop: 52956, Start Num: 31
Candidate Starts for Sassafras_96:
(Start: 31 @52732 has 104 MA's), (41, 52831),

Gene: Schnabeltier_70 Start: 46220, Stop: 46468, Start Num: 31
Candidate Starts for Schnabeltier_70:
(25, 46157), (Start: 31 @46220 has 104 MA's), (40, 46316), (45, 46376), (46, 46379),

Gene: Scottish_94 Start: 52309, Stop: 52533, Start Num: 31
Candidate Starts for Scottish_94:
(Start: 31 @52309 has 104 MA's), (41, 52408),

Gene: Seagreen_95 Start: 53324, Stop: 53548, Start Num: 31
Candidate Starts for Seagreen_95:
(Start: 31 @53324 has 104 MA's), (41, 53423),

Gene: SimranZ1_90 Start: 51204, Stop: 51428, Start Num: 31
Candidate Starts for SimranZ1_90:
(Start: 31 @51204 has 104 MA's), (41, 51303),

Gene: Slim_94 Start: 52975, Stop: 53199, Start Num: 31
Candidate Starts for Slim_94:

(Start: 31 @52975 has 104 MA's), (41, 53074),

Gene: Spikelee_95 Start: 54476, Stop: 54700, Start Num: 31

Candidate Starts for Spikelee_95:

(Start: 31 @54476 has 104 MA's), (41, 54575),

Gene: Squirty_94 Start: 56513, Stop: 56737, Start Num: 31

Candidate Starts for Squirty_94:

(Start: 31 @56513 has 104 MA's), (41, 56612),

Gene: StAnnes_98 Start: 54237, Stop: 54461, Start Num: 31

Candidate Starts for StAnnes_98:

(Start: 31 @54237 has 104 MA's), (41, 54336),

Gene: Stap_89 Start: 49963, Stop: 50187, Start Num: 31

Candidate Starts for Stap_89:

(Start: 31 @49963 has 104 MA's), (41, 50062),

Gene: Starcevich_96 Start: 54084, Stop: 54308, Start Num: 31

Candidate Starts for Starcevich_96:

(Start: 31 @54084 has 104 MA's), (41, 54183),

Gene: Suerte_69 Start: 45335, Stop: 45562, Start Num: 33

Candidate Starts for Suerte_69:

(Start: 33 @45335 has 4 MA's), (35, 45341),

Gene: Taj_101 Start: 54398, Stop: 54622, Start Num: 31

Candidate Starts for Taj_101:

(Start: 31 @54398 has 104 MA's), (41, 54497),

Gene: TaronosaurusRx_76 Start: 46596, Stop: 46844, Start Num: 31

Candidate Starts for TaronosaurusRx_76:

(19, 46488), (20, 46491), (23, 46509), (28, 46557), (Start: 31 @46596 has 104 MA's), (38, 46677), (40, 46692), (45, 46752), (46, 46755),

Gene: Tweety_95 Start: 53662, Stop: 53886, Start Num: 31

Candidate Starts for Tweety_95:

(Start: 31 @53662 has 104 MA's), (41, 53761),

Gene: UncleRicky_94 Start: 51705, Stop: 51929, Start Num: 31

Candidate Starts for UncleRicky_94:

(Start: 31 @51705 has 104 MA's), (41, 51804),

Gene: VRedHorse_95 Start: 50521, Stop: 50745, Start Num: 31

Candidate Starts for VRedHorse_95:

(Start: 31 @50521 has 104 MA's), (41, 50620),

Gene: Violac_99 Start: 54054, Stop: 54278, Start Num: 31

Candidate Starts for Violac_99:

(Start: 31 @54054 has 104 MA's), (41, 54153),

Gene: Vivum_94 Start: 54308, Stop: 54532, Start Num: 31

Candidate Starts for Vivum_94:

(Start: 31 @54308 has 104 MA's), (41, 54407),

Gene: Vulpecula_63 Start: 36929, Stop: 37147, Start Num: 32

Candidate Starts for Vulpecula_63:

(Start: 32 @36929 has 1 MA's), (34, 36935), (36, 36962), (37, 36971), (43, 37034), (47, 37073), (50, 37091), (51, 37112),

Gene: Wachhund_92 Start: 49757, Stop: 49981, Start Num: 31

Candidate Starts for Wachhund_92:

(Start: 31 @49757 has 104 MA's), (41, 49856),

Gene: Wee_98 Start: 54474, Stop: 54698, Start Num: 31

Candidate Starts for Wee_98:

(Start: 31 @54474 has 104 MA's), (41, 54573),

Gene: WillSterrel_92 Start: 53037, Stop: 53261, Start Num: 31

Candidate Starts for WillSterrel_92:

(Start: 31 @53037 has 104 MA's), (41, 53136),

Gene: XFactor_85 Start: 50787, Stop: 51011, Start Num: 31

Candidate Starts for XFactor_85:

(Start: 31 @50787 has 104 MA's), (41, 50886),

Gene: ZAYM_75 Start: 46437, Stop: 46685, Start Num: 31

Candidate Starts for ZAYM_75:

(25, 46371), (Start: 31 @46437 has 104 MA's), (38, 46518), (40, 46533), (45, 46593), (46, 46596),