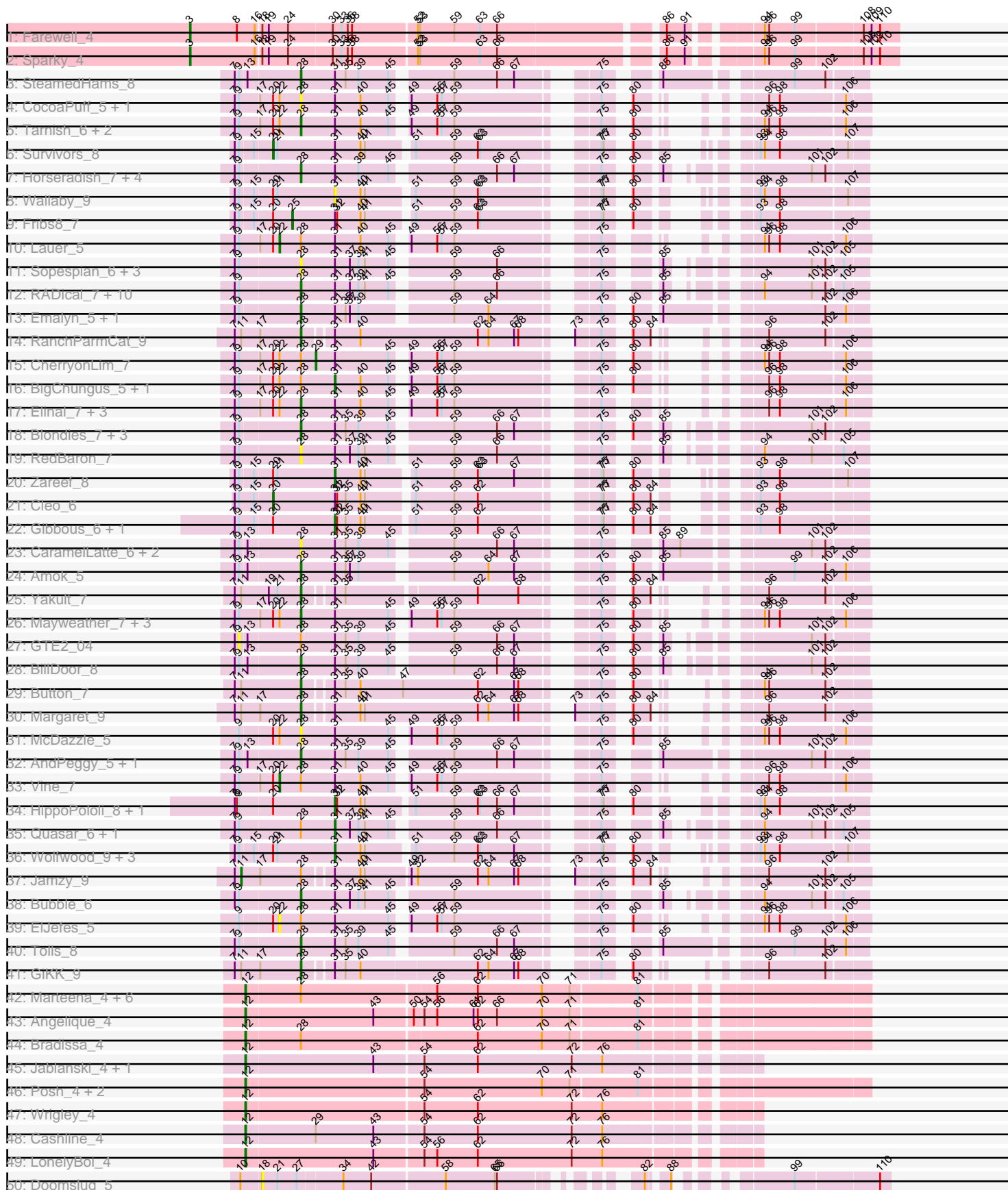


Pham 296287



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 296287 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296287 has 171 members, 30 are drafts.

Phages represented in each track:

- Track 1 : Farewell_4
- Track 2 : Sparky_4
- Track 3 : SteamedHams_8
- Track 4 : CocoaPuff_5, Balloona_5
- Track 5 : Tarnish_6, SummitAcademy_5, PotPie_6
- Track 6 : Survivors_8
- Track 7 : Horseradish_7, SweatNTears_8, Biskit_7, SketchMex_5, Yummy_7
- Track 8 : Wallaby_9
- Track 9 : Fribs8_7
- Track 10 : Lauer_5
- Track 11 : Sopespian_6, Carsonalex_7, PsychoKiller_6, Elliott_6
- Track 12 : RADical_7, RSchmailzl_7, Cozz_6, ChickenTender_8, MunkgeeRoachy_6, Agatha_6, Socotra_7, GoldHunter_7, Starburst_7, Burnsey_6, Axym_6
- Track 13 : Emalyn_5, AikoCarson_5
- Track 14 : RanchParmCat_9
- Track 15 : CherryonLim_7
- Track 16 : BigChungus_5, Feastonyeet_5
- Track 17 : Elinal_7, KayGee_6, Bavilard_6, Yucky_6
- Track 18 : Blondies_7, MScarn_8, Troje_6, Buttrmilkdreams_6
- Track 19 : RedBaron_7
- Track 20 : Zareef_8
- Track 21 : Cleo_6
- Track 22 : Gibbous_6, Dre3_6
- Track 23 : CaramelLatte_6, ChocoMunchkin_6, CanesSauce_6
- Track 24 : Amok_5
- Track 25 : Yakult_7
- Track 26 : Mayweather_7, SheckWes_5, MAnor_6, Pons_6
- Track 27 : GTE2_04
- Track 28 : BillDoor_8
- Track 29 : Button_7
- Track 30 : Margaret_9
- Track 31 : McDazzle_5
- Track 32 : AndPeggy_5, Yarn_5
- Track 33 : Vine_7
- Track 34 : HippoPololi_8, Malvina_8
- Track 35 : Quasar_6, Typhonmacy_6

- Track 36 : Wolfwood_9, Azira_8, Nibbles_8, MaVan_8
- Track 37 : Jamzy_9
- Track 38 : Bubble_6
- Track 39 : ElJefes_5
- Track 40 : Tolls_8
- Track 41 : GiKK_9
- Track 42 : Marteena_4, EnalisNailo_4, EMSquaredA_4, Floral_4, BritBrat_4, Lilas_4, Pollux_4
- Track 43 : Angelique_4
- Track 44 : Bradissa_4
- Track 45 : Jablanski_4, Pytheas_4
- Track 46 : Posh_4, BeeGee_4, Confidence_4
- Track 47 : Wrigley_4
- Track 48 : Cashline_4
- Track 49 : LonelyBoi_4
- Track 50 : Doomslug_5
- Track 51 : Frankie_5
- Track 52 : SimranZ1_5, TootsiePop_5, Leozinho_5, Spikelee_5, Brookers_5, OwlsT2W_5, Plumbus_5, Alexphander_5, Coco12_5, BigPhil_5, Bobi_5, Beakin_5, Kingsley_5, Lorde_5, RockyHorror_5, Seagreen_5, Boomer_5, Enby_5, BuzzLyseyear_5, Emmaloid_5, Aloeri_5, Rialto_5, Flathead_5, Starceвич_5, MulchExplorer_5, ChickenDinner_5, Juice456_5, Slim_5, DirtMcgirt_5, Stap_5, Piper2020_5, Cerasum_5, Ramsey_5, Beanstalk_5, Hegedechwinu_5, LittleShirley_5, DocMcStuffins_5, Pollywog_5, Madiba_5, Tchotchke_5, Lucia_5, Sarma624_5, DosHalletts_5, Brushbloom_5, JalFarm20_5, Mova_5, UncleRicky_5, DaWorst_5, Kimberlium_5, Peridot_5, Awesomesauce_5, Squirty_5, Drago_5, Misha28_5, Totinger_5, Velveteen_5, Tootsieroll_5
- Track 53 : Job42_5
- Track 54 : Girafales_5, Quico_5
- Track 55 : Marker_5
- Track 56 : Mozy_5
- Track 57 : Oksu_5
- Track 58 : Cornucopia_5
- Track 59 : LunaStella_4, TChen_4
- Track 60 : ThetaBob_4
- Track 61 : Renaud18_4
- Track 62 : Toron_4
- Track 63 : LilSpotty_4
- Track 64 : P3MA_5

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

The start number called the most often in the published annotations is 10, it was called in 60 of the 141 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alexphander_5, Aloeri_5, Awesomesauce_5, Beakin_5, Beanstalk_5, BigPhil_5, Bobi_5, Boomer_5, Brookers_5, Brushbloom_5, BuzzLyseyear_5, Cerasum_5, ChickenDinner_5, Coco12_5, Cornucopia_5, DaWorst_5, DirtMcgirt_5, DocMcStuffins_5, DosHalletts_5, Drago_5, Emmaloid_5, Enby_5, Flathead_5,

Frankie_5, Girafales_5, Hegedechwinu_5, JalFarm20_5, Job42_5, Juice456_5, Kimberlium_5, Kingsley_5, Leozinho_5, LittleShirley_5, Lorde_5, Lucia_5, Madiba_5, Marker_5, Misha28_5, Mova_5, Mozy_5, MulchExplorer_5, OwlsT2W_5, Peridot_5, Piper2020_5, Plumbus_5, Pollywog_5, Quico_5, Ramsey_5, Rialto_5, RockyHorror_5, Sarma624_5, Seagreen_5, SimranZ1_5, Slim_5, Spikelee_5, Squirty_5, Stap_5, Starceвич_5, Tchotchke_5, TootsiePop_5, Tootsieroll_5, Totinger_5, UncleRicky_5, Velveteen_5,

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

- Doomslug_5, Oksu_5,

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

- Agatha_6, AikoCarson_5, Amok_5, AndPeggy_5, Angelique_4, Axym_6, Azira_8, Balloona_5, Baviard_6, BeeGee_4, BigChungus_5, BillDoor_8, Biskit_7, Blondies_7, Bradissa_4, BritBrat_4, Bubble_6, Burnsey_6, Button_7, Buttrmlkdreams_6, CanesSauce_6, CaramelLatte_6, Carsonalex_7, Cashline_4, CherryonLim_7, ChickenTender_8, ChocoMunchkin_6, Cleo_6, CocoaPuff_5, Confidence_4, Cozz_6, Dre3_6, EMSquaredA_4, ElJefes_5, Elinal_7, Elliott_6, Emalyn_5, EnalisNailo_4, Farewell_4, Feastonyet_5, Floral_4, Fribs8_7, GTE2_04, GiKK_9, Gibbous_6, GoldHunter_7, HippoPololi_8, Horseradish_7, Jablanski_4, Jamzy_9, KayGee_6, Lauer_5, LilSpotty_4, Lilas_4, LonelyBoi_4, LunaStella_4, MAnor_6, MScarn_8, MaVan_8, Malvina_8, Margaret_9, Marteena_4, Mayweather_7, McDazzle_5, MunkgeeRoachy_6, Nibbles_8, P3MA_5, Pollux_4, Pons_6, Posh_4, PotPie_6, PsychoKiller_6, Pytheas_4, Quasar_6, RADical_7, RSchmailzl_7, RanchParmCat_9, RedBaron_7, Renaud18_4, SheckWes_5, SketchMex_5, Socotra_7, Sopespian_6, Sparky_4, Starburst_7, SteamedHams_8, SummitAcademy_5, Survivors_8, SweatNTears_8, TChen_4, Tarnish_6, ThetaBob_4, Tolls_8, Toron_4, Troje_6, Typhonomachy_6, Vine_7, Wallaby_9, Wolfwood_9, Wrigley_4, Yakult_7, Yarn_5, Yucky_6, Yummy_7, Zareef_8,

Summary by start number:

Start 3:

- Found in 2 of 171 (1.2%) of genes in pham
- Manual Annotations of this start: 2 of 141
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Farewell_4 (AF), Sparky_4 (AF),

Start 9:

- Found in 73 of 171 (42.7%) of genes in pham
- No Manual Annotations of this start.
- Called 1.4% of time when present
- Phage (with cluster) where this start called: GTE2_04 (CT),

Start 10:

- Found in 66 of 171 (38.6%) of genes in pham
- Manual Annotations of this start: 60 of 141
- Called 97.0% of time when present
- Phage (with cluster) where this start called: Alexphander_5 (F1), Aloeri_5 (F1), Awesomesauce_5 (F1), Beakin_5 (F1), Beanstalk_5 (F1), BigPhil_5 (F1), Bobi_5 (F1), Boomer_5 (F1), Brookers_5 (F1), Brushbloom_5 (F1), BuzzLyseyear_5 (F1), Cerasum_5 (F1), ChickenDinner_5 (F1), Coco12_5 (F1), Cornucopia_5 (F1), DaWorst_5 (F1), DirtMcgirt_5 (F1), DocMcStuffins_5 (F1), DosHalletts_5 (F1),

Drago_5 (F1), Emmaloid_5 (F1), Enby_5 (F1), Flathead_5 (F1), Frankie_5 (F1), Girafales_5 (F1), Hegedechwinu_5 (F1), JalFarm20_5 (F1), Job42_5 (F1), Juice456_5 (F1), Kimberlium_5 (F1), Kingsley_5 (F1), Leozinho_5 (F1), LittleShirley_5 (F1), Lorde_5 (F1), Lucia_5 (F1), Madiba_5 (F1), Marker_5 (F1), Misha28_5 (F1), Mova_5 (F1), Mozy_5 (F1), MulchExplorer_5 (F1), OwlsT2W_5 (F1), Peridot_5 (F1), Piper2020_5 (F1), Plumbus_5 (F1), Pollywog_5 (F1), Quico_5 (F1), Ramsey_5 (F1), Rialto_5 (F1), RockyHorror_5 (F1), Sarma624_5 (F1), Seagreen_5 (F1), SimranZ1_5 (F1), Slim_5 (F1), Spikelee_5 (F1), Squirty_5 (F3), Stap_5 (F1), Starceвич_5 (F1), Tchotchke_5 (F1), TootsiePop_5 (F1), Tootsieroll_5 (F1), Totinger_5 (F1), UncleRicky_5 (F1), Velveteen_5 (F1),

Start 11:

- Found in 6 of 171 (3.5%) of genes in pham
- Manual Annotations of this start: 1 of 141
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Jamzy_9 (CT),

Start 12:

- Found in 24 of 171 (14.0%) of genes in pham
- Manual Annotations of this start: 19 of 141
- Called 79.2% of time when present
- Phage (with cluster) where this start called: Angelique_4 (CY1), BeeGee_4 (CY5), Bradissa_4 (CY1), BritBrat_4 (CY2), Cashline_4 (CY6), Confidence_4 (CY1), EMSquaredA_4 (CY1), EnalisNailo_4 (CY1), Floral_4 (CY1), Jablanski_4 (CY3), LilSpotty_4 (singleton), Lilas_4 (CY1), LonelyBoi_4 (CY7), Marteenaa_4 (CY1), P3MA_5 (singleton), Pollux_4 (CY1), Posh_4 (CY4), Pytheas_4 (CY3), Wrigley_4 (CY4),

Start 18:

- Found in 67 of 171 (39.2%) of genes in pham
- No Manual Annotations of this start.
- Called 1.5% of time when present
- Phage (with cluster) where this start called: Doomslug_5 (F),

Start 20:

- Found in 33 of 171 (19.3%) of genes in pham
- Manual Annotations of this start: 2 of 141
- Called 6.1% of time when present
- Phage (with cluster) where this start called: Cleo_6 (CT), Survivors_8 (CT),

Start 22:

- Found in 20 of 171 (11.7%) of genes in pham
- Manual Annotations of this start: 2 of 141
- Called 15.0% of time when present
- Phage (with cluster) where this start called: ElJefes_5 (CT), Lauer_5 (CT), Vine_7 (CT),

Start 25:

- Found in 1 of 171 (0.6%) of genes in pham
- Manual Annotations of this start: 1 of 141
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fribs8_7 (CT),

Start 27:

- Found in 65 of 171 (38.0%) of genes in pham
- No Manual Annotations of this start.
- Called 1.5% of time when present
- Phage (with cluster) where this start called: Oksu_5 (F1),

Start 28:

- Found in 79 of 171 (46.2%) of genes in pham
- Manual Annotations of this start: 38 of 141
- Called 70.9% of time when present
- Phage (with cluster) where this start called: Agatha_6 (CT), AikoCarson_5 (CT), Amok_5 (CT), AndPeggy_5 (CT), Axym_6 (CT), Balloona_5 (CT), Bavidard_6 (CT), BillDoor_8 (CT), Biskit_7 (CT), Blondies_7 (CT), Bubble_6 (CT), Burnsey_6 (CT), Button_7 (CT), Buttrmlkdreams_6 (CT), CanesSauce_6 (CT), Caramellatte_6 (CT), Carsonalex_7 (CT), ChickenTender_8 (CT), ChocoMunchkin_6 (CT), CocoaPuff_5 (CT), Cozz_6 (CT), Elinal_7 (CT), Elliott_6 (CT), Emalyn_5 (CT), GiKK_9 (CT), GoldHunter_7 (CT), Horseradish_7 (CT), KayGee_6 (CT), MAnor_6 (CT), MScarn_8 (CT), Margaret_9 (CT), Mayweather_7 (CT), McDazzle_5 (CT), MunkgeeRoachy_6 (CT), Pons_6 (CT), PotPie_6 (CT), PsychoKiller_6 (CT), RADical_7 (CT), RSchmailzl_7 (CT), RanchParmCat_9 (CT), RedBaron_7 (CT), SheckWes_5 (CT), SketchMex_5 (CT), Socotra_7 (CT), Sopespian_6 (CT), Starburst_7 (CT), SteamedHams_8 (CT), SummitAcademy_5 (CT), SweatNTears_8 (CT), Tarnish_6 (CT), Tolls_8 (CT), Troje_6 (CT), Yakult_7 (CT), Yarn_5 (CT), Yucky_6 (CT), Yummy_7 (CT),

Start 29:

- Found in 2 of 171 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 141
- Called 50.0% of time when present
- Phage (with cluster) where this start called: CherryonLim_7 (CT),

Start 31:

- Found in 83 of 171 (48.5%) of genes in pham
- Manual Annotations of this start: 11 of 141
- Called 16.9% of time when present
- Phage (with cluster) where this start called: Azira_8 (CT), BigChungus_5 (CT), Dre3_6 (CT), Feastonyeet_5 (CT), Gibbous_6 (CT), HippoPololi_8 (CT), MaVan_8 (CT), Malvina_8 (CT), Nibbles_8 (CT), Quasar_6 (CT), Typhonmarchy_6 (CT), Wallaby_9 (CT), Wolfwood_9 (CT), Zareef_8 (CT),

Start 40:

- Found in 36 of 171 (21.1%) of genes in pham
- Manual Annotations of this start: 4 of 141
- Called 13.9% of time when present
- Phage (with cluster) where this start called: LunaStella_4 (F4), Renaud18_4 (F4), TChen_4 (F4), ThetaBob_4 (F4), Toron_4 (F6),

Summary by clusters:

There are 15 clusters represented in this pham: CY3, F1, singleton, F3, F4, CY6, F6, AF, F, CY1, CY4, CY5, CY7, CY2, CT,

Info for manual annotations of cluster AF:

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

Info for manual annotations of cluster CT:

- Start number 11 was manually annotated 1 time for cluster CT.
- Start number 20 was manually annotated 2 times for cluster CT.
- Start number 22 was manually annotated 2 times for cluster CT.
- Start number 25 was manually annotated 1 time for cluster CT.
- Start number 28 was manually annotated 38 times for cluster CT.
- Start number 29 was manually annotated 1 time for cluster CT.
- Start number 31 was manually annotated 11 times for cluster CT.

Info for manual annotations of cluster CY1:

- Start number 12 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 12 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CY3:

- Start number 12 was manually annotated 2 times for cluster CY3.

Info for manual annotations of cluster CY4:

- Start number 12 was manually annotated 2 times for cluster CY4.

Info for manual annotations of cluster CY5:

- Start number 12 was manually annotated 1 time for cluster CY5.

Info for manual annotations of cluster CY6:

- Start number 12 was manually annotated 1 time for cluster CY6.

Info for manual annotations of cluster CY7:

- Start number 12 was manually annotated 1 time for cluster CY7.

Info for manual annotations of cluster F1:

- Start number 10 was manually annotated 59 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 10 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster F4:

- Start number 40 was manually annotated 4 times for cluster F4.

Gene Information:

Gene: Agatha_6 Start: 4221, Stop: 4844, Start Num: 28

Candidate Starts for Agatha_6:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (66, 4476), (75, 4578), (85, 4629), (94, 4707), (101, 4773), (102, 4791), (105, 4812),

Gene: AikoCarson_5 Start: 3913, Stop: 4572, Start Num: 28

Candidate Starts for AikoCarson_5:

(7, 3826), (9, 3832), (Start: 28 @3913 has 38 MA's), (Start: 31 @3961 has 11 MA's), (35, 3976), (37, 3982), (39, 3994), (59, 4108), (64, 4156), (75, 4270), (80, 4291), (85, 4321), (102, 4516), (106, 4543),

Gene: Alexphander_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Alexphander_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Aloeri_5 Start: 3607, Stop: 4332, Start Num: 10

Candidate Starts for Aloeri_5:

(Start: 10 @3607 has 60 MA's), (18, 3634), (21, 3655), (27, 3682), (34, 3742), (42, 3781), (58, 3880), (65, 3949), (66, 3952), (82, 4081), (88, 4102), (99, 4210), (110, 4318),

Gene: Amok_5 Start: 3914, Stop: 4573, Start Num: 28

Candidate Starts for Amok_5:

(7, 3827), (9, 3833), (13, 3842), (Start: 28 @3914 has 38 MA's), (Start: 31 @3962 has 11 MA's), (35, 3977), (37, 3983), (39, 3995), (59, 4109), (64, 4157), (67, 4193), (75, 4271), (80, 4292), (85, 4322), (99, 4475), (102, 4517), (106, 4544),

Gene: AndPeggy_5 Start: 4225, Stop: 4881, Start Num: 28

Candidate Starts for AndPeggy_5:

(7, 4138), (9, 4144), (13, 4153), (Start: 28 @4225 has 38 MA's), (Start: 31 @4273 has 11 MA's), (35, 4288), (39, 4306), (45, 4348), (59, 4420), (66, 4480), (67, 4504), (75, 4582), (85, 4633), (101, 4810), (102, 4828),

Gene: Angelique_4 Start: 3707, Stop: 4519, Start Num: 12

Candidate Starts for Angelique_4:

(Start: 12 @3707 has 19 MA's), (43, 3884), (50, 3935), (54, 3947), (56, 3965), (61, 4016), (62, 4022), (66, 4049), (70, 4112), (71, 4151), (81, 4238),

Gene: Awesomesauce_5 Start: 3607, Stop: 4332, Start Num: 10

Candidate Starts for Awesomesauce_5:

(Start: 10 @3607 has 60 MA's), (18, 3634), (21, 3655), (27, 3682), (34, 3742), (42, 3781), (58, 3880), (65, 3949), (66, 3952), (82, 4081), (88, 4102), (99, 4210), (110, 4318),

Gene: Axym_6 Start: 4221, Stop: 4844, Start Num: 28

Candidate Starts for Axym_6:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (66, 4476), (75, 4578), (85, 4629), (94, 4707), (101, 4773), (102, 4791), (105, 4812),

Gene: Azira_8 Start: 5151, Stop: 5714, Start Num: 31

Candidate Starts for Azira_8:

(7, 5016), (9, 5022), (15, 5040), (Start: 20 @5064 has 2 MA's), (21, 5070), (Start: 31 @5151 has 11 MA's), (Start: 40 @5187 has 4 MA's), (41, 5193), (51, 5250), (59, 5304), (62, 5337), (63, 5340), (67, 5388), (75, 5466), (77, 5469), (80, 5487), (93, 5571), (94, 5577), (98, 5598), (107, 5688),

Gene: Balloona_5 Start: 3999, Stop: 4592, Start Num: 28

Candidate Starts for Balloona_5:

(7, 3909), (9, 3915), (17, 3942), (Start: 20 @3960 has 2 MA's), (Start: 22 @3969 has 2 MA's), (Start: 28 @3999 has 38 MA's), (Start: 31 @4047 has 11 MA's), (Start: 40 @4083 has 4 MA's), (45, 4122), (49,

4134), (56, 4170), (57, 4176), (59, 4194), (75, 4356), (80, 4377), (96, 4458), (98, 4473), (106, 4560),

Gene: Bavilard_6 Start: 4775, Stop: 5368, Start Num: 28

Candidate Starts for Bavilard_6:

(7, 4685), (9, 4691), (17, 4718), (Start: 20 @4736 has 2 MA's), (Start: 22 @4745 has 2 MA's), (Start: 28 @4775 has 38 MA's), (Start: 31 @4823 has 11 MA's), (Start: 40 @4859 has 4 MA's), (45, 4898), (49, 4910), (56, 4946), (57, 4952), (59, 4970), (75, 5132), (96, 5234), (98, 5249), (106, 5336),

Gene: Beakin_5 Start: 3607, Stop: 4332, Start Num: 10

Candidate Starts for Beakin_5:

(Start: 10 @3607 has 60 MA's), (18, 3634), (21, 3655), (27, 3682), (34, 3742), (42, 3781), (58, 3880), (65, 3949), (66, 3952), (82, 4081), (88, 4102), (99, 4210), (110, 4318),

Gene: Beanstalk_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Beanstalk_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: BeeGee_4 Start: 3710, Stop: 4522, Start Num: 12

Candidate Starts for BeeGee_4:

(Start: 12 @3710 has 19 MA's), (54, 3950), (70, 4115), (71, 4154), (81, 4241),

Gene: BigChungus_5 Start: 4072, Stop: 4617, Start Num: 31

Candidate Starts for BigChungus_5:

(7, 3934), (9, 3940), (17, 3967), (Start: 20 @3985 has 2 MA's), (Start: 22 @3994 has 2 MA's), (Start: 28 @4024 has 38 MA's), (Start: 31 @4072 has 11 MA's), (Start: 40 @4108 has 4 MA's), (45, 4147), (49, 4159), (56, 4195), (57, 4201), (59, 4219), (75, 4381), (80, 4402), (96, 4483), (98, 4498), (106, 4585),

Gene: BigPhil_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for BigPhil_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: BillDoor_8 Start: 4220, Stop: 4846, Start Num: 28

Candidate Starts for BillDoor_8:

(7, 4133), (9, 4139), (13, 4148), (Start: 28 @4220 has 38 MA's), (Start: 31 @4268 has 11 MA's), (35, 4283), (39, 4301), (45, 4343), (59, 4415), (66, 4475), (67, 4499), (75, 4577), (80, 4598), (85, 4628), (101, 4775), (102, 4793),

Gene: Biskit_7 Start: 4215, Stop: 4838, Start Num: 28

Candidate Starts for Biskit_7:

(7, 4128), (9, 4134), (Start: 28 @4215 has 38 MA's), (Start: 31 @4263 has 11 MA's), (39, 4296), (45, 4338), (59, 4410), (66, 4470), (67, 4494), (75, 4572), (80, 4593), (85, 4623), (101, 4767), (102, 4785),

Gene: Blondies_7 Start: 4216, Stop: 4839, Start Num: 28

Candidate Starts for Blondies_7:

(7, 4129), (9, 4135), (Start: 28 @4216 has 38 MA's), (Start: 31 @4264 has 11 MA's), (35, 4279), (39, 4297), (45, 4339), (59, 4411), (66, 4471), (67, 4495), (75, 4573), (80, 4594), (85, 4624), (101, 4768), (102, 4786),

Gene: Bobi_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Bobi_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Boomer_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Boomer_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Bradissa_4 Start: 3716, Stop: 4528, Start Num: 12

Candidate Starts for Bradissa_4:

(Start: 12 @3716 has 19 MA's), (Start: 28 @3791 has 38 MA's), (62, 4031), (70, 4121), (71, 4160), (81, 4247),

Gene: BritBrat_4 Start: 3716, Stop: 4528, Start Num: 12

Candidate Starts for BritBrat_4:

(Start: 12 @3716 has 19 MA's), (Start: 28 @3791 has 38 MA's), (56, 3974), (62, 4031), (70, 4121), (71, 4160), (81, 4247),

Gene: Brookers_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Brookers_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Brushbloom_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Brushbloom_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Bubble_6 Start: 4221, Stop: 4844, Start Num: 28

Candidate Starts for Bubble_6:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (75, 4578), (85, 4629), (94, 4707), (101, 4773), (102, 4791), (105, 4812),

Gene: Burnsey_6 Start: 4221, Stop: 4844, Start Num: 28

Candidate Starts for Burnsey_6:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (66, 4476), (75, 4578), (85, 4629), (94, 4707), (101, 4773), (102, 4791), (105, 4812),

Gene: Button_7 Start: 4307, Stop: 4906, Start Num: 28

Candidate Starts for Button_7:

(7, 4214), (Start: 11 @4223 has 1 MA's), (Start: 28 @4307 has 38 MA's), (Start: 31 @4343 has 11 MA's), (35, 4358), (Start: 40 @4379 has 4 MA's), (47, 4439), (62, 4544), (67, 4595), (68, 4601), (75, 4673), (80, 4694), (94, 4766), (96, 4772), (102, 4850),

Gene: Buttrmlkdreams_6 Start: 4216, Stop: 4839, Start Num: 28

Candidate Starts for Buttrmlkdreams_6:

(7, 4129), (9, 4135), (Start: 28 @4216 has 38 MA's), (Start: 31 @4264 has 11 MA's), (35, 4279), (39, 4297), (45, 4339), (59, 4411), (66, 4471), (67, 4495), (75, 4573), (80, 4594), (85, 4624), (101, 4768), (102, 4786),

Gene: BuzzLyseyear_5 Start: 3603, Stop: 4328, Start Num: 10

Candidate Starts for BuzzLyseyear_5:

(Start: 10 @3603 has 60 MA's), (18, 3630), (21, 3651), (27, 3678), (34, 3738), (42, 3777), (58, 3876), (65, 3945), (66, 3948), (82, 4077), (88, 4098), (99, 4206), (110, 4314),

Gene: CanesSauce_6 Start: 4225, Stop: 4881, Start Num: 28

Candidate Starts for CanesSauce_6:

(7, 4138), (9, 4144), (13, 4153), (Start: 28 @4225 has 38 MA's), (Start: 31 @4273 has 11 MA's), (35, 4288), (39, 4306), (45, 4348), (59, 4420), (66, 4480), (67, 4504), (75, 4582), (85, 4633), (89, 4657), (101, 4810), (102, 4828),

Gene: CaramellLatte_6 Start: 4225, Stop: 4881, Start Num: 28

Candidate Starts for CaramellLatte_6:

(7, 4138), (9, 4144), (13, 4153), (Start: 28 @4225 has 38 MA's), (Start: 31 @4273 has 11 MA's), (35, 4288), (39, 4306), (45, 4348), (59, 4420), (66, 4480), (67, 4504), (75, 4582), (85, 4633), (89, 4657), (101, 4810), (102, 4828),

Gene: Carsonalex_7 Start: 4278, Stop: 4901, Start Num: 28

Candidate Starts for Carsonalex_7:

(7, 4188), (9, 4194), (Start: 28 @4278 has 38 MA's), (Start: 31 @4326 has 11 MA's), (37, 4347), (39, 4359), (41, 4368), (45, 4401), (59, 4473), (66, 4533), (75, 4635), (85, 4686), (101, 4830), (102, 4848), (105, 4869),

Gene: Cashline_4 Start: 3710, Stop: 4375, Start Num: 12

Candidate Starts for Cashline_4:

(Start: 12 @3710 has 19 MA's), (Start: 29 @3806 has 1 MA's), (43, 3887), (54, 3950), (62, 4025), (72, 4157), (76, 4199),

Gene: Cerasum_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Cerasum_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: CherryonLim_7 Start: 4771, Stop: 5343, Start Num: 29

Candidate Starts for CherryonLim_7:

(7, 4660), (9, 4666), (17, 4693), (Start: 20 @4711 has 2 MA's), (Start: 22 @4720 has 2 MA's), (Start: 28 @4750 has 38 MA's), (Start: 29 @4771 has 1 MA's), (Start: 31 @4798 has 11 MA's), (45, 4873), (49, 4885), (56, 4921), (57, 4927), (59, 4945), (75, 5107), (80, 5128), (94, 5203), (96, 5209), (98, 5224), (106, 5311),

Gene: ChickenDinner_5 Start: 3607, Stop: 4332, Start Num: 10

Candidate Starts for ChickenDinner_5:

(Start: 10 @3607 has 60 MA's), (18, 3634), (21, 3655), (27, 3682), (34, 3742), (42, 3781), (58, 3880), (65, 3949), (66, 3952), (82, 4081), (88, 4102), (99, 4210), (110, 4318),

Gene: ChickenTender_8 Start: 4269, Stop: 4892, Start Num: 28

Candidate Starts for ChickenTender_8:

(7, 4179), (9, 4185), (Start: 28 @4269 has 38 MA's), (Start: 31 @4317 has 11 MA's), (37, 4338), (39, 4350), (41, 4359), (45, 4392), (59, 4464), (66, 4524), (75, 4626), (85, 4677), (94, 4755), (101, 4821), (102, 4839), (105, 4860),

Gene: ChocoMunchkin_6 Start: 4225, Stop: 4881, Start Num: 28

Candidate Starts for ChocoMunchkin_6:

(7, 4138), (9, 4144), (13, 4153), (Start: 28 @4225 has 38 MA's), (Start: 31 @4273 has 11 MA's), (35, 4288), (39, 4306), (45, 4348), (59, 4420), (66, 4480), (67, 4504), (75, 4582), (85, 4633), (89, 4657), (101, 4810), (102, 4828),

Gene: Cleo_6 Start: 4357, Stop: 5013, Start Num: 20

Candidate Starts for Cleo_6:

(7, 4306), (9, 4312), (15, 4333), (Start: 20 @4357 has 2 MA's), (Start: 31 @4444 has 11 MA's), (32, 4447), (35, 4459), (Start: 40 @4480 has 4 MA's), (41, 4486), (51, 4543), (59, 4597), (62, 4630), (75, 4759), (77, 4762), (80, 4780), (84, 4804), (93, 4870), (98, 4897),

Gene: Coco12_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Coco12_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: CocoaPuff_5 Start: 3999, Stop: 4592, Start Num: 28

Candidate Starts for CocoaPuff_5:

(7, 3909), (9, 3915), (17, 3942), (Start: 20 @3960 has 2 MA's), (Start: 22 @3969 has 2 MA's), (Start: 28 @3999 has 38 MA's), (Start: 31 @4047 has 11 MA's), (Start: 40 @4083 has 4 MA's), (45, 4122), (49, 4134), (56, 4170), (57, 4176), (59, 4194), (75, 4356), (80, 4377), (96, 4458), (98, 4473), (106, 4560),

Gene: Confidence_4 Start: 3710, Stop: 4522, Start Num: 12

Candidate Starts for Confidence_4:

(Start: 12 @3710 has 19 MA's), (54, 3950), (70, 4115), (71, 4154), (81, 4241),

Gene: Cornucopia_5 Start: 3606, Stop: 4331, Start Num: 10

Candidate Starts for Cornucopia_5:

(Start: 10 @3606 has 60 MA's), (18, 3633), (19, 3642), (26, 3678), (Start: 28 @3687 has 38 MA's), (Start: 31 @3729 has 11 MA's), (37, 3750), (38, 3753), (42, 3780), (58, 3879), (65, 3948), (66, 3951), (82, 4080), (88, 4101), (96, 4173), (110, 4317),

Gene: Cozz_6 Start: 4221, Stop: 4844, Start Num: 28

Candidate Starts for Cozz_6:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (66, 4476), (75, 4578), (85, 4629), (94, 4707), (101, 4773), (102, 4791), (105, 4812),

Gene: DaWorst_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for DaWorst_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: DirtMcgirt_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for DirtMcgirt_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: DocMcStuffins_5 Start: 3607, Stop: 4332, Start Num: 10

Candidate Starts for DocMcStuffins_5:

(Start: 10 @3607 has 60 MA's), (18, 3634), (21, 3655), (27, 3682), (34, 3742), (42, 3781), (58, 3880), (65, 3949), (66, 3952), (82, 4081), (88, 4102), (99, 4210), (110, 4318),

Gene: Doomslug_5 Start: 3631, Stop: 4329, Start Num: 18

Candidate Starts for Doomslug_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: DosHalletts_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for DosHalletts_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Drago_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Drago_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Dre3_6 Start: 4388, Stop: 4960, Start Num: 31

Candidate Starts for Dre3_6:

(7, 4250), (9, 4256), (15, 4277), (Start: 20 @4301 has 2 MA's), (Start: 31 @4388 has 11 MA's), (32, 4391), (35, 4403), (Start: 40 @4424 has 4 MA's), (41, 4430), (51, 4490), (59, 4544), (62, 4577), (75, 4706), (77, 4709), (80, 4727), (84, 4751), (93, 4817), (98, 4844),

Gene: EMSquaredA_4 Start: 3716, Stop: 4528, Start Num: 12

Candidate Starts for EMSquaredA_4:

(Start: 12 @3716 has 19 MA's), (Start: 28 @3791 has 38 MA's), (56, 3974), (62, 4031), (70, 4121), (71, 4160), (81, 4247),

Gene: ElJefes_5 Start: 4440, Stop: 5063, Start Num: 22

Candidate Starts for ElJefes_5:

(9, 4389), (Start: 20 @4431 has 2 MA's), (Start: 22 @4440 has 2 MA's), (Start: 28 @4470 has 38 MA's), (Start: 31 @4518 has 11 MA's), (45, 4593), (49, 4605), (56, 4641), (57, 4647), (59, 4665), (75, 4827), (80, 4848), (94, 4923), (96, 4929), (98, 4944), (106, 5031),

Gene: Elinal_7 Start: 4002, Stop: 4595, Start Num: 28

Candidate Starts for Elinal_7:

(7, 3912), (9, 3918), (17, 3945), (Start: 20 @3963 has 2 MA's), (Start: 22 @3972 has 2 MA's), (Start: 28 @4002 has 38 MA's), (Start: 31 @4050 has 11 MA's), (Start: 40 @4086 has 4 MA's), (45, 4125), (49, 4137), (56, 4173), (57, 4179), (59, 4197), (75, 4359), (96, 4461), (98, 4476), (106, 4563),

Gene: Elliott_6 Start: 4221, Stop: 4844, Start Num: 28

Candidate Starts for Elliott_6:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (66, 4476), (75, 4578), (85, 4629), (101, 4773), (102, 4791), (105, 4812),

Gene: Emalyn_5 Start: 3913, Stop: 4572, Start Num: 28

Candidate Starts for Emalyn_5:

(7, 3826), (9, 3832), (Start: 28 @3913 has 38 MA's), (Start: 31 @3961 has 11 MA's), (35, 3976), (37, 3982), (39, 3994), (59, 4108), (64, 4156), (75, 4270), (80, 4291), (85, 4321), (102, 4516), (106, 4543),

Gene: Emmaloid_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for Emmaloid_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: EnalisNailo_4 Start: 3716, Stop: 4528, Start Num: 12

Candidate Starts for EnalisNailo_4:

(Start: 12 @3716 has 19 MA's), (Start: 28 @3791 has 38 MA's), (56, 3974), (62, 4031), (70, 4121), (71, 4160), (81, 4247),

Gene: Enby_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Enby_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Farewell_4 Start: 3759, Stop: 4664, Start Num: 3

Candidate Starts for Farewell_4:

(Start: 3 @3759 has 2 MA's), (8, 3825), (16, 3849), (18, 3855), (19, 3864), (24, 3891), (30, 3951), (33, 3963), (36, 3972), (38, 3978), (52, 4065), (53, 4068), (59, 4113), (63, 4149), (66, 4173), (86, 4383), (91, 4407), (94, 4488), (96, 4494), (99, 4530), (108, 4617), (109, 4626), (110, 4638),

Gene: Feastonyeet_5 Start: 4072, Stop: 4617, Start Num: 31

Candidate Starts for Feastonyeet_5:

(7, 3934), (9, 3940), (17, 3967), (Start: 20 @3985 has 2 MA's), (Start: 22 @3994 has 2 MA's), (Start: 28 @4024 has 38 MA's), (Start: 31 @4072 has 11 MA's), (Start: 40 @4108 has 4 MA's), (45, 4147), (49, 4159), (56, 4195), (57, 4201), (59, 4219), (75, 4381), (80, 4402), (96, 4483), (98, 4498), (106, 4585),

Gene: Flathead_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Flathead_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Floral_4 Start: 3716, Stop: 4528, Start Num: 12

Candidate Starts for Floral_4:

(Start: 12 @3716 has 19 MA's), (Start: 28 @3791 has 38 MA's), (56, 3974), (62, 4031), (70, 4121), (71, 4160), (81, 4247),

Gene: Frankie_5 Start: 3798, Stop: 4523, Start Num: 10

Candidate Starts for Frankie_5:

(4, 3744), (Start: 10 @3798 has 60 MA's), (19, 3834), (27, 3873), (34, 3933), (42, 3972), (58, 4071), (65, 4140), (66, 4143), (82, 4272), (88, 4293), (99, 4401), (110, 4509),

Gene: Fribs8_7 Start: 4879, Stop: 5508, Start Num: 25

Candidate Starts for Fribs8_7:

(7, 4804), (9, 4810), (15, 4828), (Start: 20 @4852 has 2 MA's), (Start: 25 @4879 has 1 MA's), (Start: 31 @4939 has 11 MA's), (32, 4942), (Start: 40 @4975 has 4 MA's), (41, 4981), (51, 5038), (59, 5092), (62, 5125), (63, 5128), (75, 5254), (77, 5257), (80, 5275), (93, 5365), (98, 5392),

Gene: GTE2_04 Start: 3827, Stop: 4531, Start Num: 9

Candidate Starts for GTE2_04:

(7, 3821), (9, 3827), (13, 3836), (Start: 28 @3908 has 38 MA's), (Start: 31 @3956 has 11 MA's), (35, 3971), (39, 3989), (45, 4031), (59, 4103), (66, 4163), (67, 4187), (75, 4265), (80, 4286), (85, 4316), (101, 4460), (102, 4478),

Gene: GiKK_9 Start: 4616, Stop: 5209, Start Num: 28

Candidate Starts for GiKK_9:

(7, 4523), (Start: 11 @4532 has 1 MA's), (17, 4559), (Start: 28 @4616 has 38 MA's), (Start: 31 @4652 has 11 MA's), (35, 4667), (Start: 40 @4688 has 4 MA's), (62, 4847), (64, 4862), (67, 4898), (68, 4904),

(75, 4976), (80, 4997), (96, 5075), (102, 5153),

Gene: Gibbous_6 Start: 4388, Stop: 4960, Start Num: 31

Candidate Starts for Gibbous_6:

(7, 4250), (9, 4256), (15, 4277), (Start: 20 @4301 has 2 MA's), (Start: 31 @4388 has 11 MA's), (32, 4391), (35, 4403), (Start: 40 @4424 has 4 MA's), (41, 4430), (51, 4490), (59, 4544), (62, 4577), (75, 4706), (77, 4709), (80, 4727), (84, 4751), (93, 4817), (98, 4844),

Gene: Girafales_5 Start: 3602, Stop: 4327, Start Num: 10

Candidate Starts for Girafales_5:

(Start: 10 @3602 has 60 MA's), (18, 3629), (19, 3638), (23, 3659), (26, 3674), (27, 3677), (Start: 28 @3683 has 38 MA's), (Start: 31 @3725 has 11 MA's), (37, 3746), (38, 3749), (42, 3776), (58, 3875), (65, 3944), (66, 3947), (69, 3983), (82, 4076), (88, 4097), (96, 4169), (110, 4313),

Gene: GoldHunter_7 Start: 4221, Stop: 4844, Start Num: 28

Candidate Starts for GoldHunter_7:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (66, 4476), (75, 4578), (85, 4629), (94, 4707), (101, 4773), (102, 4791), (105, 4812),

Gene: Hegedechwinu_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Hegedechwinu_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: HippoPololi_8 Start: 5028, Stop: 5600, Start Num: 31

Candidate Starts for HippoPololi_8:

(7, 4890), (8, 4893), (9, 4896), (Start: 20 @4941 has 2 MA's), (Start: 31 @5028 has 11 MA's), (32, 5031), (Start: 40 @5064 has 4 MA's), (41, 5070), (51, 5130), (59, 5184), (62, 5217), (63, 5220), (66, 5244), (67, 5268), (75, 5346), (77, 5349), (80, 5367), (93, 5457), (94, 5463), (98, 5484),

Gene: Horseradish_7 Start: 4122, Stop: 4745, Start Num: 28

Candidate Starts for Horseradish_7:

(7, 4035), (9, 4041), (Start: 28 @4122 has 38 MA's), (Start: 31 @4170 has 11 MA's), (39, 4203), (45, 4245), (59, 4317), (66, 4377), (67, 4401), (75, 4479), (80, 4500), (85, 4530), (101, 4674), (102, 4692),

Gene: Jablanski_4 Start: 3710, Stop: 4375, Start Num: 12

Candidate Starts for Jablanski_4:

(Start: 12 @3710 has 19 MA's), (43, 3887), (54, 3950), (62, 4025), (72, 4157), (76, 4199),

Gene: JalFarm20_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for JalFarm20_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Jamzy_9 Start: 4537, Stop: 5217, Start Num: 11

Candidate Starts for Jamzy_9:

(7, 4528), (Start: 11 @4537 has 1 MA's), (17, 4564), (Start: 28 @4621 has 38 MA's), (Start: 31 @4657 has 11 MA's), (Start: 40 @4693 has 4 MA's), (41, 4699), (49, 4759), (52, 4768), (62, 4852), (64, 4867), (67, 4903), (68, 4909), (73, 4948), (75, 4981), (80, 5002), (84, 5026), (96, 5083), (102, 5161),

Gene: Job42_5 Start: 3603, Stop: 4328, Start Num: 10

Candidate Starts for Job42_5:

(Start: 10 @3603 has 60 MA's), (18, 3630), (21, 3651), (27, 3678), (34, 3738), (42, 3777), (58, 3876), (65, 3945), (66, 3948), (82, 4077), (88, 4098), (99, 4206), (104, 4266), (110, 4314),

Gene: Juice456_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for Juice456_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: KayGee_6 Start: 4002, Stop: 4595, Start Num: 28

Candidate Starts for KayGee_6:

(7, 3912), (9, 3918), (17, 3945), (Start: 20 @3963 has 2 MA's), (Start: 22 @3972 has 2 MA's), (Start: 28 @4002 has 38 MA's), (Start: 31 @4050 has 11 MA's), (Start: 40 @4086 has 4 MA's), (45, 4125), (49, 4137), (56, 4173), (57, 4179), (59, 4197), (75, 4359), (96, 4461), (98, 4476), (106, 4563),

Gene: Kimberlium_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for Kimberlium_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: Kingsley_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Kingsley_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Lauer_5 Start: 4024, Stop: 4647, Start Num: 22

Candidate Starts for Lauer_5:

(7, 3964), (9, 3970), (17, 3997), (Start: 20 @4015 has 2 MA's), (Start: 22 @4024 has 2 MA's), (Start: 28 @4054 has 38 MA's), (Start: 31 @4102 has 11 MA's), (Start: 40 @4138 has 4 MA's), (45, 4177), (49, 4189), (56, 4225), (57, 4231), (59, 4249), (75, 4411), (94, 4507), (96, 4513), (98, 4528), (106, 4615),

Gene: Leozinho_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Leozinho_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: LilSpotty_4 Start: 3229, Stop: 3888, Start Num: 12

Candidate Starts for LilSpotty_4:

(5, 3193), (6, 3214), (Start: 12 @3229 has 19 MA's), (21, 3271), (Start: 28 @3304 has 38 MA's), (44, 3412), (48, 3451), (61, 3529), (66, 3562), (69, 3598), (82, 3664), (95, 3748), (96, 3751), (99, 3787),

Gene: Lilas_4 Start: 3716, Stop: 4528, Start Num: 12

Candidate Starts for Lilas_4:

(Start: 12 @3716 has 19 MA's), (Start: 28 @3791 has 38 MA's), (56, 3974), (62, 4031), (70, 4121), (71, 4160), (81, 4247),

Gene: LittleShirley_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for LittleShirley_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: LonelyBoi_4 Start: 3710, Stop: 4375, Start Num: 12

Candidate Starts for LonelyBoi_4:

(Start: 12 @3710 has 19 MA's), (43, 3887), (54, 3950), (56, 3968), (62, 4025), (72, 4157), (76, 4199),

Gene: Lorde_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Lorde_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Lucia_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Lucia_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: LunaStella_4 Start: 3803, Stop: 4498, Start Num: 40

Candidate Starts for LunaStella_4:

(Start: 12 @3644 has 19 MA's), (14, 3650), (Start: 40 @3803 has 4 MA's), (43, 3821), (49, 3869), (55, 3893), (59, 3926), (61, 3950), (64, 3971), (66, 3983), (69, 4019), (70, 4046), (71, 4085), (72, 4088), (79, 4151), (82, 4190), (87, 4226), (90, 4244), (92, 4256), (94, 4355), (99, 4397),

Gene: MAnor_6 Start: 3999, Stop: 4592, Start Num: 28

Candidate Starts for MAnor_6:

(7, 3909), (9, 3915), (17, 3942), (Start: 20 @3960 has 2 MA's), (Start: 22 @3969 has 2 MA's), (Start: 28 @3999 has 38 MA's), (Start: 31 @4047 has 11 MA's), (45, 4122), (49, 4134), (56, 4170), (57, 4176), (59, 4194), (75, 4356), (80, 4377), (94, 4452), (96, 4458), (98, 4473), (106, 4560),

Gene: MScarn_8 Start: 4216, Stop: 4839, Start Num: 28

Candidate Starts for MScarn_8:

(7, 4129), (9, 4135), (Start: 28 @4216 has 38 MA's), (Start: 31 @4264 has 11 MA's), (35, 4279), (39, 4297), (45, 4339), (59, 4411), (66, 4471), (67, 4495), (75, 4573), (80, 4594), (85, 4624), (101, 4768), (102, 4786),

Gene: MaVan_8 Start: 5151, Stop: 5714, Start Num: 31

Candidate Starts for MaVan_8:

(7, 5016), (9, 5022), (15, 5040), (Start: 20 @5064 has 2 MA's), (21, 5070), (Start: 31 @5151 has 11 MA's), (Start: 40 @5187 has 4 MA's), (41, 5193), (51, 5250), (59, 5304), (62, 5337), (63, 5340), (67, 5388), (75, 5466), (77, 5469), (80, 5487), (93, 5571), (94, 5577), (98, 5598), (107, 5688),

Gene: Madiba_5 Start: 3603, Stop: 4328, Start Num: 10

Candidate Starts for Madiba_5:

(Start: 10 @3603 has 60 MA's), (18, 3630), (21, 3651), (27, 3678), (34, 3738), (42, 3777), (58, 3876), (65, 3945), (66, 3948), (82, 4077), (88, 4098), (99, 4206), (110, 4314),

Gene: Malvina_8 Start: 5031, Stop: 5603, Start Num: 31

Candidate Starts for Malvina_8:

(7, 4893), (8, 4896), (9, 4899), (Start: 20 @4944 has 2 MA's), (Start: 31 @5031 has 11 MA's), (32, 5034), (Start: 40 @5067 has 4 MA's), (41, 5073), (51, 5133), (59, 5187), (62, 5220), (63, 5223), (66, 5247), (67, 5271), (75, 5349), (77, 5352), (80, 5370), (93, 5460), (94, 5466), (98, 5487),

Gene: Margaret_9 Start: 4991, Stop: 5593, Start Num: 28

Candidate Starts for Margaret_9:

(7, 4898), (Start: 11 @4907 has 1 MA's), (17, 4934), (Start: 28 @4991 has 38 MA's), (Start: 31 @5027 has 11 MA's), (Start: 40 @5063 has 4 MA's), (41, 5069), (62, 5228), (64, 5243), (67, 5279), (68, 5285), (73, 5324), (75, 5357), (80, 5378), (84, 5402), (96, 5459), (102, 5537),

Gene: Marker_5 Start: 3603, Stop: 4328, Start Num: 10

Candidate Starts for Marker_5:

(Start: 10 @3603 has 60 MA's), (18, 3630), (21, 3651), (27, 3678), (34, 3738), (42, 3777), (46, 3816), (58, 3876), (65, 3945), (66, 3948), (82, 4077), (88, 4098), (99, 4206), (110, 4314),

Gene: Marteena_4 Start: 3716, Stop: 4528, Start Num: 12

Candidate Starts for Marteena_4:

(Start: 12 @3716 has 19 MA's), (Start: 28 @3791 has 38 MA's), (56, 3974), (62, 4031), (70, 4121), (71, 4160), (81, 4247),

Gene: Mayweather_7 Start: 4620, Stop: 5213, Start Num: 28

Candidate Starts for Mayweather_7:

(7, 4530), (9, 4536), (17, 4563), (Start: 20 @4581 has 2 MA's), (Start: 22 @4590 has 2 MA's), (Start: 28 @4620 has 38 MA's), (Start: 31 @4668 has 11 MA's), (45, 4743), (49, 4755), (56, 4791), (57, 4797), (59, 4815), (75, 4977), (80, 4998), (94, 5073), (96, 5079), (98, 5094), (106, 5181),

Gene: McDazzle_5 Start: 4464, Stop: 5057, Start Num: 28

Candidate Starts for McDazzle_5:

(9, 4383), (Start: 20 @4425 has 2 MA's), (Start: 22 @4434 has 2 MA's), (Start: 28 @4464 has 38 MA's), (Start: 31 @4512 has 11 MA's), (45, 4587), (49, 4599), (56, 4635), (57, 4641), (59, 4659), (75, 4821), (80, 4842), (94, 4917), (96, 4923), (98, 4938), (106, 5025),

Gene: Misha28_5 Start: 3607, Stop: 4332, Start Num: 10

Candidate Starts for Misha28_5:

(Start: 10 @3607 has 60 MA's), (18, 3634), (21, 3655), (27, 3682), (34, 3742), (42, 3781), (58, 3880), (65, 3949), (66, 3952), (82, 4081), (88, 4102), (99, 4210), (110, 4318),

Gene: Mova_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for Mova_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: Mozy_5 Start: 3603, Stop: 4328, Start Num: 10

Candidate Starts for Mozy_5:

(Start: 10 @3603 has 60 MA's), (18, 3630), (19, 3639), (26, 3675), (27, 3678), (Start: 28 @3684 has 38 MA's), (Start: 31 @3726 has 11 MA's), (37, 3747), (38, 3750), (42, 3777), (58, 3876), (65, 3945), (66, 3948), (82, 4077), (88, 4098), (96, 4170), (110, 4314),

Gene: MulchExplorer_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for MulchExplorer_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: MunkgeeRoachy_6 Start: 4269, Stop: 4892, Start Num: 28

Candidate Starts for MunkgeeRoachy_6:

(7, 4179), (9, 4185), (Start: 28 @4269 has 38 MA's), (Start: 31 @4317 has 11 MA's), (37, 4338), (39, 4350), (41, 4359), (45, 4392), (59, 4464), (66, 4524), (75, 4626), (85, 4677), (94, 4755), (101, 4821), (102, 4839), (105, 4860),

Gene: Nibbles_8 Start: 5151, Stop: 5714, Start Num: 31

Candidate Starts for Nibbles_8:

(7, 5016), (9, 5022), (15, 5040), (Start: 20 @5064 has 2 MA's), (21, 5070), (Start: 31 @5151 has 11 MA's), (Start: 40 @5187 has 4 MA's), (41, 5193), (51, 5250), (59, 5304), (62, 5337), (63, 5340), (67, 5388), (75, 5466), (77, 5469), (80, 5487), (93, 5571), (94, 5577), (98, 5598), (107, 5688),

Gene: Oksu_5 Start: 3680, Stop: 4330, Start Num: 27

Candidate Starts for Oksu_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: OwlsT2W_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for OwlsT2W_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: P3MA_5 Start: 3858, Stop: 4730, Start Num: 12

Candidate Starts for P3MA_5:

(1, 3546), (2, 3741), (Start: 12 @3858 has 19 MA's), (60, 4140), (67, 4215), (83, 4296), (97, 4404), (100, 4437), (103, 4479), (111, 4563), (112, 4566), (113, 4635), (114, 4710),

Gene: Peridot_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Peridot_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Piper2020_5 Start: 3607, Stop: 4332, Start Num: 10

Candidate Starts for Piper2020_5:

(Start: 10 @3607 has 60 MA's), (18, 3634), (21, 3655), (27, 3682), (34, 3742), (42, 3781), (58, 3880), (65, 3949), (66, 3952), (82, 4081), (88, 4102), (99, 4210), (110, 4318),

Gene: Plumbus_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for Plumbus_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: Pollux_4 Start: 3716, Stop: 4528, Start Num: 12

Candidate Starts for Pollux_4:

(Start: 12 @3716 has 19 MA's), (Start: 28 @3791 has 38 MA's), (56, 3974), (62, 4031), (70, 4121), (71, 4160), (81, 4247),

Gene: Pollywog_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Pollywog_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Pons_6 Start: 3999, Stop: 4592, Start Num: 28

Candidate Starts for Pons_6:

(7, 3909), (9, 3915), (17, 3942), (Start: 20 @3960 has 2 MA's), (Start: 22 @3969 has 2 MA's), (Start: 28 @3999 has 38 MA's), (Start: 31 @4047 has 11 MA's), (45, 4122), (49, 4134), (56, 4170), (57, 4176), (59, 4194), (75, 4356), (80, 4377), (94, 4452), (96, 4458), (98, 4473), (106, 4560),

Gene: Posh_4 Start: 3710, Stop: 4522, Start Num: 12

Candidate Starts for Posh_4:

(Start: 12 @3710 has 19 MA's), (54, 3950), (70, 4115), (71, 4154), (81, 4241),

Gene: PotPie_6 Start: 4858, Stop: 5451, Start Num: 28

Candidate Starts for PotPie_6:

(7, 4768), (9, 4774), (17, 4801), (Start: 20 @4819 has 2 MA's), (Start: 22 @4828 has 2 MA's), (Start: 28 @4858 has 38 MA's), (Start: 31 @4906 has 11 MA's), (Start: 40 @4942 has 4 MA's), (45, 4981), (49, 4993), (56, 5029), (57, 5035), (59, 5053), (75, 5215), (80, 5236), (94, 5311), (96, 5317), (98, 5332), (106, 5419),

Gene: PsychoKiller_6 Start: 4221, Stop: 4844, Start Num: 28

Candidate Starts for PsychoKiller_6:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (66, 4476), (75, 4578), (85, 4629), (101, 4773), (102, 4791), (105, 4812),

Gene: Pytheas_4 Start: 3710, Stop: 4375, Start Num: 12

Candidate Starts for Pytheas_4:

(Start: 12 @3710 has 19 MA's), (43, 3887), (54, 3950), (62, 4025), (72, 4157), (76, 4199),

Gene: Quasar_6 Start: 4890, Stop: 5465, Start Num: 31

Candidate Starts for Quasar_6:

(7, 4752), (9, 4758), (Start: 28 @4842 has 38 MA's), (Start: 31 @4890 has 11 MA's), (37, 4911), (39, 4923), (41, 4932), (45, 4965), (59, 5037), (66, 5097), (75, 5199), (85, 5250), (94, 5328), (101, 5394), (102, 5412), (105, 5433),

Gene: Quico_5 Start: 3602, Stop: 4327, Start Num: 10

Candidate Starts for Quico_5:

(Start: 10 @3602 has 60 MA's), (18, 3629), (19, 3638), (23, 3659), (26, 3674), (27, 3677), (Start: 28 @3683 has 38 MA's), (Start: 31 @3725 has 11 MA's), (37, 3746), (38, 3749), (42, 3776), (58, 3875), (65, 3944), (66, 3947), (69, 3983), (82, 4076), (88, 4097), (96, 4169), (110, 4313),

Gene: RADical_7 Start: 4222, Stop: 4845, Start Num: 28

Candidate Starts for RADical_7:

(7, 4132), (9, 4138), (Start: 28 @4222 has 38 MA's), (Start: 31 @4270 has 11 MA's), (37, 4291), (39, 4303), (41, 4312), (45, 4345), (59, 4417), (66, 4477), (75, 4579), (85, 4630), (94, 4708), (101, 4774), (102, 4792), (105, 4813),

Gene: RSchmailzl_7 Start: 4362, Stop: 4985, Start Num: 28

Candidate Starts for RSchmailzl_7:

(7, 4272), (9, 4278), (Start: 28 @4362 has 38 MA's), (Start: 31 @4410 has 11 MA's), (37, 4431), (39, 4443), (41, 4452), (45, 4485), (59, 4557), (66, 4617), (75, 4719), (85, 4770), (94, 4848), (101, 4914), (102, 4932), (105, 4953),

Gene: Ramsey_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Ramsey_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: RanchParmCat_9 Start: 4991, Stop: 5593, Start Num: 28

Candidate Starts for RanchParmCat_9:

(7, 4898), (Start: 11 @4907 has 1 MA's), (17, 4934), (Start: 28 @4991 has 38 MA's), (Start: 31 @5027 has 11 MA's), (Start: 40 @5063 has 4 MA's), (62, 5228), (64, 5243), (67, 5279), (68, 5285), (73, 5324), (75, 5357), (80, 5378), (84, 5402), (96, 5459), (102, 5537),

Gene: RedBaron_7 Start: 4266, Stop: 4889, Start Num: 28

Candidate Starts for RedBaron_7:

(7, 4176), (9, 4182), (Start: 28 @4266 has 38 MA's), (Start: 31 @4314 has 11 MA's), (37, 4335), (39, 4347), (41, 4356), (45, 4389), (59, 4461), (66, 4521), (75, 4623), (85, 4674), (94, 4752), (101, 4818), (105, 4857),

Gene: Renaud18_4 Start: 3803, Stop: 4378, Start Num: 40

Candidate Starts for Renaud18_4:

(Start: 12 @3644 has 19 MA's), (14, 3650), (Start: 40 @3803 has 4 MA's), (43, 3821), (48, 3866), (49, 3869), (55, 3893), (59, 3926), (61, 3950), (64, 3971), (66, 3983), (69, 4019), (70, 4046), (71, 4085), (72, 4088), (74, 4115), (94, 4235), (99, 4277),

Gene: Rialto_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for Rialto_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: RockyHorror_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for RockyHorror_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Sarma624_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Sarma624_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Seagreen_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for Seagreen_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: SheckWes_5 Start: 3999, Stop: 4592, Start Num: 28

Candidate Starts for SheckWes_5:

(7, 3909), (9, 3915), (17, 3942), (Start: 20 @3960 has 2 MA's), (Start: 22 @3969 has 2 MA's), (Start: 28 @3999 has 38 MA's), (Start: 31 @4047 has 11 MA's), (45, 4122), (49, 4134), (56, 4170), (57, 4176), (59, 4194), (75, 4356), (80, 4377), (94, 4452), (96, 4458), (98, 4473), (106, 4560),

Gene: SimranZ1_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for SimranZ1_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: SketchMex_5 Start: 4215, Stop: 4838, Start Num: 28

Candidate Starts for SketchMex_5:

(7, 4128), (9, 4134), (Start: 28 @4215 has 38 MA's), (Start: 31 @4263 has 11 MA's), (39, 4296), (45, 4338), (59, 4410), (66, 4470), (67, 4494), (75, 4572), (80, 4593), (85, 4623), (101, 4767), (102, 4785),

Gene: Slim_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for Slim_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: Socotra_7 Start: 4221, Stop: 4844, Start Num: 28

Candidate Starts for Socotra_7:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (66, 4476), (75, 4578), (85, 4629), (94, 4707), (101, 4773), (102, 4791), (105, 4812),

Gene: Sopespian_6 Start: 4221, Stop: 4844, Start Num: 28

Candidate Starts for Sopespian_6:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (66, 4476), (75, 4578), (85, 4629), (101, 4773), (102, 4791), (105, 4812),

Gene: Sparky_4 Start: 3760, Stop: 4665, Start Num: 3

Candidate Starts for Sparky_4:

(Start: 3 @3760 has 2 MA's), (16, 3850), (18, 3856), (19, 3865), (24, 3892), (30, 3952), (33, 3964), (36, 3973), (38, 3979), (52, 4066), (53, 4069), (63, 4150), (66, 4174), (86, 4384), (91, 4408), (94, 4489), (96, 4495), (99, 4531), (108, 4618), (109, 4627), (110, 4639),

Gene: Spikelee_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Spikelee_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Squirty_5 Start: 3603, Stop: 4328, Start Num: 10

Candidate Starts for Squirty_5:

(Start: 10 @3603 has 60 MA's), (18, 3630), (21, 3651), (27, 3678), (34, 3738), (42, 3777), (58, 3876), (65, 3945), (66, 3948), (82, 4077), (88, 4098), (99, 4206), (110, 4314),

Gene: Stap_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Stap_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Starburst_7 Start: 4221, Stop: 4844, Start Num: 28

Candidate Starts for Starburst_7:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (66, 4476), (75, 4578), (85, 4629), (94, 4707), (101, 4773), (102, 4791), (105, 4812),

Gene: Starcevich_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Starcevich_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: SteamedHams_8 Start: 4225, Stop: 4881, Start Num: 28

Candidate Starts for SteamedHams_8:

(7, 4138), (9, 4144), (13, 4153), (Start: 28 @4225 has 38 MA's), (Start: 31 @4273 has 11 MA's), (35, 4288), (39, 4306), (45, 4348), (59, 4420), (66, 4480), (67, 4504), (75, 4582), (85, 4633), (99, 4786), (102, 4828),

Gene: SummitAcademy_5 Start: 4073, Stop: 4666, Start Num: 28

Candidate Starts for SummitAcademy_5:

(7, 3983), (9, 3989), (17, 4016), (Start: 20 @4034 has 2 MA's), (Start: 22 @4043 has 2 MA's), (Start: 28 @4073 has 38 MA's), (Start: 31 @4121 has 11 MA's), (Start: 40 @4157 has 4 MA's), (45, 4196), (49, 4208), (56, 4244), (57, 4250), (59, 4268), (75, 4430), (80, 4451), (94, 4526), (96, 4532), (98, 4547),

(106, 4634),

Gene: Survivors_8 Start: 4918, Stop: 5568, Start Num: 20

Candidate Starts for Survivors_8:

(7, 4870), (9, 4876), (15, 4894), (Start: 20 @4918 has 2 MA's), (21, 4924), (Start: 31 @5005 has 11 MA's), (Start: 40 @5041 has 4 MA's), (41, 5047), (51, 5104), (59, 5158), (62, 5191), (63, 5194), (75, 5320), (77, 5323), (80, 5341), (93, 5425), (94, 5431), (98, 5452), (107, 5542),

Gene: SweatNTears_8 Start: 4742, Stop: 5365, Start Num: 28

Candidate Starts for SweatNTears_8:

(7, 4655), (9, 4661), (Start: 28 @4742 has 38 MA's), (Start: 31 @4790 has 11 MA's), (39, 4823), (45, 4865), (59, 4937), (66, 4997), (67, 5021), (75, 5099), (80, 5120), (85, 5150), (101, 5294), (102, 5312),

Gene: TChen_4 Start: 3803, Stop: 4498, Start Num: 40

Candidate Starts for TChen_4:

(Start: 12 @3644 has 19 MA's), (14, 3650), (Start: 40 @3803 has 4 MA's), (43, 3821), (49, 3869), (55, 3893), (59, 3926), (61, 3950), (64, 3971), (66, 3983), (69, 4019), (70, 4046), (71, 4085), (72, 4088), (79, 4151), (82, 4190), (87, 4226), (90, 4244), (92, 4256), (94, 4355), (99, 4397),

Gene: Tarnish_6 Start: 4372, Stop: 4965, Start Num: 28

Candidate Starts for Tarnish_6:

(7, 4282), (9, 4288), (17, 4315), (Start: 20 @4333 has 2 MA's), (Start: 22 @4342 has 2 MA's), (Start: 28 @4372 has 38 MA's), (Start: 31 @4420 has 11 MA's), (Start: 40 @4456 has 4 MA's), (45, 4495), (49, 4507), (56, 4543), (57, 4549), (59, 4567), (75, 4729), (80, 4750), (94, 4825), (96, 4831), (98, 4846), (106, 4933),

Gene: Tchotchke_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for Tchotchke_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: ThetaBob_4 Start: 3803, Stop: 4378, Start Num: 40

Candidate Starts for ThetaBob_4:

(Start: 12 @3644 has 19 MA's), (14, 3650), (Start: 40 @3803 has 4 MA's), (43, 3821), (49, 3869), (55, 3893), (59, 3926), (61, 3950), (64, 3971), (66, 3983), (69, 4019), (70, 4046), (71, 4085), (72, 4088), (74, 4115), (94, 4235), (99, 4277),

Gene: Tolls_8 Start: 4226, Stop: 4885, Start Num: 28

Candidate Starts for Tolls_8:

(7, 4139), (9, 4145), (Start: 28 @4226 has 38 MA's), (Start: 31 @4274 has 11 MA's), (35, 4289), (39, 4307), (45, 4349), (59, 4421), (66, 4481), (67, 4505), (75, 4583), (85, 4634), (99, 4787), (102, 4829), (106, 4856),

Gene: TootsiePop_5 Start: 3607, Stop: 4332, Start Num: 10

Candidate Starts for TootsiePop_5:

(Start: 10 @3607 has 60 MA's), (18, 3634), (21, 3655), (27, 3682), (34, 3742), (42, 3781), (58, 3880), (65, 3949), (66, 3952), (82, 4081), (88, 4102), (99, 4210), (110, 4318),

Gene: Tootsieroll_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Tootsieroll_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Toron_4 Start: 3803, Stop: 4498, Start Num: 40

Candidate Starts for Toron_4:

(Start: 12 @3644 has 19 MA's), (14, 3650), (37, 3788), (Start: 40 @3803 has 4 MA's), (43, 3821), (49, 3869), (55, 3893), (59, 3926), (61, 3950), (64, 3971), (66, 3983), (69, 4019), (70, 4046), (71, 4085), (72, 4088), (78, 4148), (79, 4151), (82, 4190), (90, 4244), (92, 4256), (94, 4355), (99, 4397),

Gene: Totinger_5 Start: 3605, Stop: 4330, Start Num: 10

Candidate Starts for Totinger_5:

(Start: 10 @3605 has 60 MA's), (18, 3632), (21, 3653), (27, 3680), (34, 3740), (42, 3779), (58, 3878), (65, 3947), (66, 3950), (82, 4079), (88, 4100), (99, 4208), (110, 4316),

Gene: Troje_6 Start: 4216, Stop: 4839, Start Num: 28

Candidate Starts for Troje_6:

(7, 4129), (9, 4135), (Start: 28 @4216 has 38 MA's), (Start: 31 @4264 has 11 MA's), (35, 4279), (39, 4297), (45, 4339), (59, 4411), (66, 4471), (67, 4495), (75, 4573), (80, 4594), (85, 4624), (101, 4768), (102, 4786),

Gene: Typhonomachy_6 Start: 4269, Stop: 4844, Start Num: 31

Candidate Starts for Typhonomachy_6:

(7, 4131), (9, 4137), (Start: 28 @4221 has 38 MA's), (Start: 31 @4269 has 11 MA's), (37, 4290), (39, 4302), (41, 4311), (45, 4344), (59, 4416), (66, 4476), (75, 4578), (85, 4629), (94, 4707), (101, 4773), (102, 4791), (105, 4812),

Gene: UncleRicky_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for UncleRicky_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Velveteen_5 Start: 3604, Stop: 4329, Start Num: 10

Candidate Starts for Velveteen_5:

(Start: 10 @3604 has 60 MA's), (18, 3631), (21, 3652), (27, 3679), (34, 3739), (42, 3778), (58, 3877), (65, 3946), (66, 3949), (82, 4078), (88, 4099), (99, 4207), (110, 4315),

Gene: Vine_7 Start: 4967, Stop: 5590, Start Num: 22

Candidate Starts for Vine_7:

(7, 4907), (9, 4913), (17, 4940), (Start: 20 @4958 has 2 MA's), (Start: 22 @4967 has 2 MA's), (Start: 28 @4997 has 38 MA's), (Start: 31 @5045 has 11 MA's), (Start: 40 @5081 has 4 MA's), (45, 5120), (49, 5132), (56, 5168), (57, 5174), (59, 5192), (75, 5354), (96, 5456), (98, 5471), (106, 5558),

Gene: Wallaby_9 Start: 5150, Stop: 5713, Start Num: 31

Candidate Starts for Wallaby_9:

(7, 5015), (9, 5021), (15, 5039), (Start: 20 @5063 has 2 MA's), (21, 5069), (Start: 31 @5150 has 11 MA's), (Start: 40 @5186 has 4 MA's), (41, 5192), (51, 5249), (59, 5303), (62, 5336), (63, 5339), (75, 5465), (77, 5468), (80, 5486), (93, 5570), (94, 5576), (98, 5597), (107, 5687),

Gene: Wolfwood_9 Start: 5150, Stop: 5713, Start Num: 31

Candidate Starts for Wolfwood_9:

(7, 5015), (9, 5021), (15, 5039), (Start: 20 @5063 has 2 MA's), (21, 5069), (Start: 31 @5150 has 11 MA's), (Start: 40 @5186 has 4 MA's), (41, 5192), (51, 5249), (59, 5303), (62, 5336), (63, 5339), (67, 5387), (75, 5465), (77, 5468), (80, 5486), (93, 5570), (94, 5576), (98, 5597), (107, 5687),

Gene: Wrigley_4 Start: 3707, Stop: 4372, Start Num: 12

Candidate Starts for Wrigley_4:

(Start: 12 @3707 has 19 MA's), (54, 3947), (62, 4022), (72, 4154), (76, 4196),

Gene: Yakult_7 Start: 4190, Stop: 4777, Start Num: 28

Candidate Starts for Yakult_7:

(7, 4097), (Start: 11 @4106 has 1 MA's), (19, 4145), (21, 4157), (Start: 28 @4190 has 38 MA's), (Start: 31 @4226 has 11 MA's), (35, 4241), (62, 4412), (68, 4469), (75, 4541), (80, 4562), (84, 4586), (96, 4643), (102, 4721),

Gene: Yarn_5 Start: 4219, Stop: 4875, Start Num: 28

Candidate Starts for Yarn_5:

(7, 4132), (9, 4138), (13, 4147), (Start: 28 @4219 has 38 MA's), (Start: 31 @4267 has 11 MA's), (35, 4282), (39, 4300), (45, 4342), (59, 4414), (66, 4474), (67, 4498), (75, 4576), (85, 4627), (101, 4804), (102, 4822),

Gene: Yucky_6 Start: 4858, Stop: 5451, Start Num: 28

Candidate Starts for Yucky_6:

(7, 4768), (9, 4774), (17, 4801), (Start: 20 @4819 has 2 MA's), (Start: 22 @4828 has 2 MA's), (Start: 28 @4858 has 38 MA's), (Start: 31 @4906 has 11 MA's), (Start: 40 @4942 has 4 MA's), (45, 4981), (49, 4993), (56, 5029), (57, 5035), (59, 5053), (75, 5215), (96, 5317), (98, 5332), (106, 5419),

Gene: Yummy_7 Start: 4122, Stop: 4745, Start Num: 28

Candidate Starts for Yummy_7:

(7, 4035), (9, 4041), (Start: 28 @4122 has 38 MA's), (Start: 31 @4170 has 11 MA's), (39, 4203), (45, 4245), (59, 4317), (66, 4377), (67, 4401), (75, 4479), (80, 4500), (85, 4530), (101, 4674), (102, 4692),

Gene: Zareef_8 Start: 5152, Stop: 5715, Start Num: 31

Candidate Starts for Zareef_8:

(7, 5017), (9, 5023), (15, 5041), (Start: 20 @5065 has 2 MA's), (21, 5071), (Start: 31 @5152 has 11 MA's), (Start: 40 @5188 has 4 MA's), (41, 5194), (51, 5251), (59, 5305), (62, 5338), (63, 5341), (67, 5389), (75, 5467), (77, 5470), (80, 5488), (93, 5572), (98, 5599), (107, 5689),