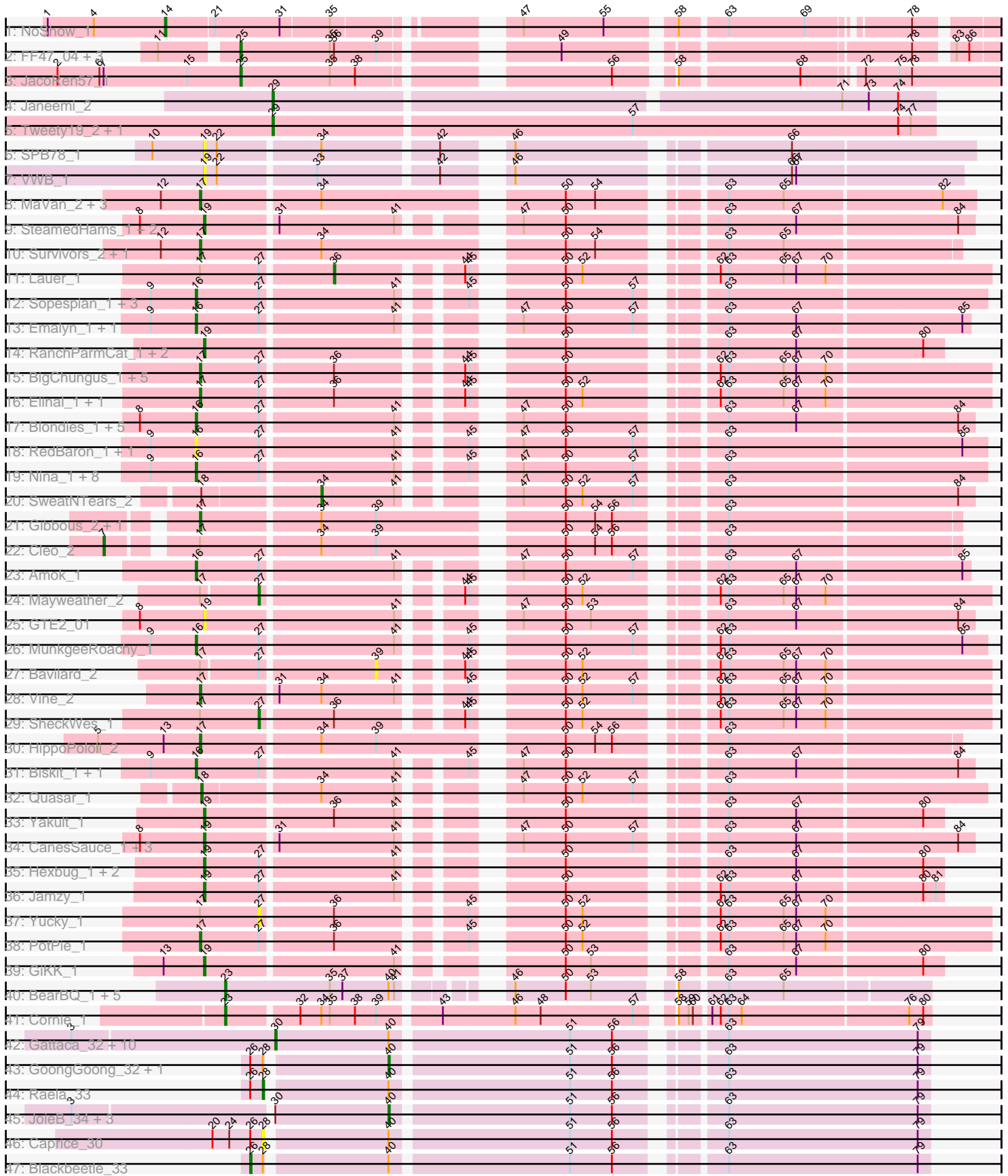


Pham 224433



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 224433 Report

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

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

Pham number 224433 has 109 members, 25 are drafts.

Phages represented in each track:

- Track 1 : NoShow_1
- Track 2 : FF47_04, Muddy_4, 8UZL_4, Maco6_2
- Track 3 : JacoRen57_1
- Track 4 : Janeemi_2
- Track 5 : Tweety19_2, Snek_2
- Track 6 : SPB78_1
- Track 7 : VWB_1
- Track 8 : MaVan_2, Zareef_2, Azira_2, Nibbles_2
- Track 9 : SteamedHams_1, AndPeggy_1, BillDoor_1
- Track 10 : Survivors_2, Fribs8_2
- Track 11 : Lauer_1
- Track 12 : Sopespian_1, PsychoKiller_1, Burnsey_1, Elliott_1
- Track 13 : Emalyn_1, AikoCarson_1
- Track 14 : RanchParmCat_1, Button_1, Margaret_1
- Track 15 : BigChungus_1, Feastonyeet_1, SummitAcademy_1, Pons_1, CherryonLim_1, MAnor_1
- Track 16 : Elinal_1, KayGee_1
- Track 17 : Blondies_1, Horseradish_1, Troje_1, MScarn_1, Buttrmlkdreams_1, Yummy_1
- Track 18 : RedBaron_1, Carsonalex_1
- Track 19 : Nina_1, Cozz_1, ChickenTender_1, Agatha_1, Typhonomachy_1, GoldHunter_1, Socotra_1, Starburst_1, Axym_1
- Track 20 : SweatNTears_2
- Track 21 : Gibbous_2, Dre3_2
- Track 22 : Cleo_2
- Track 23 : Amok_1
- Track 24 : Mayweather_2
- Track 25 : GTE2_01
- Track 26 : MunkgeeRoachy_1
- Track 27 : Bavidard_2
- Track 28 : Vine_2
- Track 29 : SheckWes_1
- Track 30 : HippoPololi_2

- Track 31 : Biskit_1, SketchMex_1
- Track 32 : Quasar_1
- Track 33 : Yakult_1
- Track 34 : CanesSauce_1, Tolls_1, ChocoMunchkin_1, Yarn_1
- Track 35 : Hexbug_1, Orla_1, Nodigi_1
- Track 36 : Jamzy_1
- Track 37 : Yucky_1
- Track 38 : PotPie_1
- Track 39 : GiKK_1
- Track 40 : BearBQ_1, MortyNRick_1, Kuwabara_1, Crater_1, Apricot_1, Birdsong_1
- Track 41 : Cornie_1
- Track 42 : Gattaca_32, RedRaider77_33, Corazon_31, Huphlepuuff_35, Tesla_32, Pringar_33, Lilbit_34, LittleLaf_33, VasuNzinga_33, FeliMaine_35, Clarkson_34
- Track 43 : GoongGoong_32, Poise_33
- Track 44 : Raela_33
- Track 45 : JoieB_34, Marvin_31, MosMoris_31, Beelzebub_37
- Track 46 : Caprice_30
- Track 47 : Blackbeetle_33

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

The start number called the most often in the published annotations is 17, it was called in 18 of the 84 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Azira_2, BigChungus_1, CherryonLim_1, Dre3_2, Elinal_1, Feastonyeet_1, Fribs8_2, Gibbous_2, HippoPololi_2, KayGee_1, MAnor_1, MaVan_2, Nibbles_2, Pons_1, PotPie_1, SummitAcademy_1, Survivors_2, Vine_2, Zareef_2,

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

- Bavidard_2, Cleo_2, Lauer_1, Mayweather_2, SheckWes_1, Yucky_1,

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

- 8UZL_4, Agatha_1, AikoCarson_1, Amok_1, AndPeggy_1, Apricot_1, Axym_1, BearBQ_1, Beelzebub_37, BillDoor_1, Birdsong_1, Biskit_1, Blackbeetle_33, Blondies_1, Burnsey_1, Button_1, Buttrmlkdreams_1, CanesSauce_1, Caprice_30, Carsonalex_1, ChickenTender_1, ChocoMunchkin_1, Clarkson_34, Corazon_31, Cornie_1, Cozz_1, Crater_1, Elliott_1, Emalyn_1, FF47_04, FeliMaine_35, GTE2_01, Gattaca_32, GiKK_1, GoldHunter_1, GoongGoong_32, Hexbug_1, Horseradish_1, Huphlepuuff_35, JacoRen57_1, Jamzy_1, Janeemi_2, JoieB_34, Kuwabara_1, Lilbit_34, LittleLaf_33, MScarn_1, Maco6_2, Margaret_1, Marvin_31, MortyNRick_1, MosMoris_31, Muddy_4, MunkgeeRoachy_1, Nina_1, NoShow_1, Nodigi_1, Orla_1, Poise_33, Pringar_33, PsychoKiller_1, Quasar_1, Raela_33, RanchParmCat_1, RedBaron_1, RedRaider77_33, SPB78_1, SketchMex_1, Snek_2, Socotra_1, Sopespian_1, Starburst_1, SteamedHams_1, SweatNTears_2, Tesla_32, Tolls_1, Troje_1, Tweety19_2, Typhonomachy_1, VWB_1, VasuNzinga_33, Yakult_1, Yarn_1, Yummy_1,

Summary by start number:

Start 7:

- Found in 2 of 109 (1.8%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Cleo_2 (CT),

Start 14:

- Found in 1 of 109 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NoShow_1 (AB),

Start 16:

- Found in 27 of 109 (24.8%) of genes in pham
- Manual Annotations of this start: 16 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agatha_1 (CT), AikoCarson_1 (CT), Amok_1 (CT), Axym_1 (CT), Biskit_1 (CT), Blondies_1 (CT), Burnsey_1 (CT), Buttrmilkdreams_1 (CT), Carsonalex_1 (CT), ChickenTender_1 (CT), Cozz_1 (CT), Elliott_1 (CT), Emalyn_1 (CT), GoldHunter_1 (CT), Horseradish_1 (CT), MScarn_1 (CT), MunkgeeRoachy_1 (CT), Nina_1 (CT), PsychoKiller_1 (CT), RedBaron_1 (CT), SketchMex_1 (CT), Socotra_1 (CT), Sopespian_1 (CT), Starburst_1 (CT), Troje_1 (CT), Typhonmarchy_1 (CT), Yummy_1 (CT),

Start 17:

- Found in 25 of 109 (22.9%) of genes in pham
- Manual Annotations of this start: 18 of 84
- Called 76.0% of time when present
- Phage (with cluster) where this start called: Azira_2 (CT), BigChungus_1 (CT), CherryonLim_1 (CT), Dre3_2 (CT), Elinal_1 (CT), Feastonyeet_1 (CT), Fribs8_2 (CT), Gibbous_2 (CT), HippoPololi_2 (CT), KayGee_1 (CT), MAnor_1 (CT), MaVan_2 (CT), Nibbles_2 (CT), Pons_1 (CT), PotPie_1 (CT), SummitAcademy_1 (CT), Survivors_2 (CT), Vine_2 (CT), Zareef_2 (CT),

Start 18:

- Found in 2 of 109 (1.8%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Quasar_1 (CT),

Start 19:

- Found in 19 of 109 (17.4%) of genes in pham
- Manual Annotations of this start: 14 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AndPeggy_1 (CT), BillDoor_1 (CT), Button_1 (CT), CanesSauce_1 (CT), ChocoMunchkin_1 (CT), GTE2_01 (CT), GiKK_1 (CT), Hexbug_1 (CT), Jamzy_1 (CT), Margaret_1 (CT), Nodigi_1 (CT), Orla_1 (CT), RanchParmCat_1 (CT), SPB78_1 (BA), SteamedHams_1 (CT), Tolls_1 (CT), VWB_1 (BA), Yakult_1 (CT), Yarn_1 (CT),

Start 23:

- Found in 7 of 109 (6.4%) of genes in pham
- Manual Annotations of this start: 6 of 84

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot_1 (DN3), BearBQ_1 (DN), Birdsong_1 (DN), Cornie_1 (F5), Crater_1 (DN3), Kuwabara_1 (DN4), MortyNRick_1 (DN),

Start 25:

- Found in 5 of 109 (4.6%) of genes in pham
- Manual Annotations of this start: 3 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 8UZL_4 (AB), FF47_04 (AB), JacoRen57_1 (AB), Maco6_2 (AB), Muddy_4 (AB),

Start 26:

- Found in 5 of 109 (4.6%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Blackbeetle_33 (S),

Start 27:

- Found in 45 of 109 (41.3%) of genes in pham
- Manual Annotations of this start: 2 of 84
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Mayweather_2 (CT), SheckWes_1 (CT), Yucky_1 (CT),

Start 28:

- Found in 5 of 109 (4.6%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Caprice_30 (S), Raela_33 (S),

Start 29:

- Found in 3 of 109 (2.8%) of genes in pham
- Manual Annotations of this start: 3 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Janeemi_2 (AZ1), Snek_2 (AZ3), Tweety19_2 (AZ3),

Start 30:

- Found in 15 of 109 (13.8%) of genes in pham
- Manual Annotations of this start: 10 of 84
- Called 73.3% of time when present
- Phage (with cluster) where this start called: Clarkson_34 (S), Corazon_31 (S), FeliMaine_35 (S), Gattaca_32 (S), Huphlepuuff_35 (S), Lilbit_34 (S), LittleLaf_33 (S), Pringar_33 (S), RedRaider77_33 (S), Tesla_32 (S), VasuNzinga_33 (S),

Start 34:

- Found in 15 of 109 (13.8%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 6.7% of time when present
- Phage (with cluster) where this start called: SweatNTears_2 (CT),

Start 36:

- Found in 17 of 109 (15.6%) of genes in pham
- Manual Annotations of this start: 1 of 84
- Called 5.9% of time when present
- Phage (with cluster) where this start called: Lauer_1 (CT),

Start 39:

- Found in 10 of 109 (9.2%) of genes in pham
- No Manual Annotations of this start.
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Bavidard_2 (CT),

Start 40:

- Found in 26 of 109 (23.9%) of genes in pham
- Manual Annotations of this start: 5 of 84
- Called 23.1% of time when present
- Phage (with cluster) where this start called: Beelzebub_37 (S), GoongGoong_32 (S), JoieB_34 (S), Marvin_31 (S), MosMoris_31 (S), Poise_33 (S),

Summary by clusters:

There are 10 clusters represented in this pham: DN, AB, BA, F5, DN4, S, DN3, AZ1, AZ3, CT,

Info for manual annotations of cluster AB:

- Start number 14 was manually annotated 1 time for cluster AB.
- Start number 25 was manually annotated 3 times for cluster AB.

Info for manual annotations of cluster AZ1:

- Start number 29 was manually annotated 1 time for cluster AZ1.

Info for manual annotations of cluster AZ3:

- Start number 29 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster CT:

- Start number 7 was manually annotated 1 time for cluster CT.
- Start number 16 was manually annotated 16 times for cluster CT.
- Start number 17 was manually annotated 18 times for cluster CT.
- Start number 18 was manually annotated 1 time for cluster CT.
- Start number 19 was manually annotated 14 times for cluster CT.
- Start number 27 was manually annotated 2 times for cluster CT.
- Start number 34 was manually annotated 1 time for cluster CT.
- Start number 36 was manually annotated 1 time for cluster CT.

Info for manual annotations of cluster DN:

- Start number 23 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN3:

- Start number 23 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 23 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster F5:

- Start number 23 was manually annotated 1 time for cluster F5.

Info for manual annotations of cluster S:

- Start number 26 was manually annotated 1 time for cluster S.
- Start number 28 was manually annotated 1 time for cluster S.
- Start number 30 was manually annotated 10 times for cluster S.
- Start number 40 was manually annotated 5 times for cluster S.

Gene Information:

Gene: 8UZL_4 Start: 1322, Stop: 1795, Start Num: 25

Candidate Starts for 8UZL_4:

(11, 1274), (Start: 25 @1322 has 3 MA's), (35, 1385), (Start: 36 @1388 has 1 MA's), (39, 1418), (49, 1520), (78, 1745), (83, 1766), (86, 1775),

Gene: Agatha_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for Agatha_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (57, 319), (63, 364),

Gene: AikoCarson_1 Start: 52, Stop: 531, Start Num: 16

Candidate Starts for AikoCarson_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (47, 241), (50, 271), (57, 319), (63, 364), (67, 412), (85, 526),

Gene: Amok_1 Start: 53, Stop: 532, Start Num: 16

Candidate Starts for Amok_1:

(Start: 16 @53 has 16 MA's), (Start: 27 @98 has 2 MA's), (41, 188), (47, 242), (50, 272), (57, 320), (63, 365), (67, 413), (85, 527),

Gene: AndPeggy_1 Start: 59, Stop: 535, Start Num: 19

Candidate Starts for AndPeggy_1:

(8, 14), (Start: 19 @59 has 14 MA's), (31, 107), (41, 188), (47, 242), (50, 272), (63, 365), (67, 413), (84, 524),

Gene: Apricot_1 Start: 50, Stop: 484, Start Num: 23

Candidate Starts for Apricot_1:

(Start: 23 @50 has 6 MA's), (35, 125), (37, 134), (Start: 40 @167 has 5 MA's), (41, 170), (46, 218), (50, 254), (53, 272), (58, 317), (63, 347), (65, 386),

Gene: Axym_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for Axym_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (57, 319), (63, 364),

Gene: Azira_2 Start: 425, Stop: 922, Start Num: 17

Candidate Starts for Azira_2:

(12, 398), (Start: 17 @425 has 18 MA's), (Start: 34 @506 has 1 MA's), (50, 659), (54, 680), (63, 752), (65, 791), (82, 899),

Gene: Bavilard_2 Start: 592, Stop: 963, Start Num: 39

Candidate Starts for Bavilard_2:

(Start: 17 @475 has 18 MA's), (Start: 27 @514 has 2 MA's), (39, 592), (44, 637), (45, 640), (50, 688), (52, 700), (62, 775), (63, 781), (65, 820), (67, 829), (70, 850),

Gene: BearBQ_1 Start: 50, Stop: 484, Start Num: 23

Candidate Starts for BearBQ_1:

(Start: 23 @50 has 6 MA's), (35, 125), (37, 134), (Start: 40 @167 has 5 MA's), (41, 170), (46, 218), (50, 254), (53, 272), (58, 317), (63, 347), (65, 386),

Gene: Beelzebub_37 Start: 10803, Stop: 11156, Start Num: 40

Candidate Starts for Beelzebub_37:

(3, 10587), (Start: 30 @10722 has 10 MA's), (Start: 40 @10803 has 5 MA's), (51, 10923), (56, 10953), (63, 11013), (79, 11148),

Gene: BigChungus_1 Start: 56, Stop: 547, Start Num: 17

Candidate Starts for BigChungus_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (44, 221), (45, 224), (50, 272), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: BillDoor_1 Start: 59, Stop: 535, Start Num: 19

Candidate Starts for BillDoor_1:

(8, 14), (Start: 19 @59 has 14 MA's), (31, 107), (41, 188), (47, 242), (50, 272), (63, 365), (67, 413), (84, 524),

Gene: Birdsong_1 Start: 50, Stop: 484, Start Num: 23

Candidate Starts for Birdsong_1:

(Start: 23 @50 has 6 MA's), (35, 125), (37, 134), (Start: 40 @167 has 5 MA's), (41, 170), (46, 218), (50, 254), (53, 272), (58, 317), (63, 347), (65, 386),

Gene: Biskit_1 Start: 52, Stop: 534, Start Num: 16

Candidate Starts for Biskit_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (63, 364), (67, 412), (84, 523),

Gene: Blackbeetle_33 Start: 9732, Stop: 10175, Start Num: 26

Candidate Starts for Blackbeetle_33:

(Start: 26 @9732 has 1 MA's), (Start: 28 @9741 has 1 MA's), (Start: 40 @9822 has 5 MA's), (51, 9942), (56, 9972), (63, 10032), (79, 10167),

Gene: Blondies_1 Start: 53, Stop: 535, Start Num: 16

Candidate Starts for Blondies_1:

(8, 14), (Start: 16 @53 has 16 MA's), (Start: 27 @98 has 2 MA's), (41, 188), (47, 242), (50, 272), (63, 365), (67, 413), (84, 524),

Gene: Burnsey_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for Burnsey_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (50, 271), (57, 319), (63, 364),

Gene: Button_1 Start: 50, Stop: 505, Start Num: 19

Candidate Starts for Button_1:

(Start: 19 @50 has 14 MA's), (50, 263), (63, 356), (67, 404), (80, 491),

Gene: Buttrmlkdreams_1 Start: 53, Stop: 535, Start Num: 16

Candidate Starts for Buttrmlkdreams_1:

(8, 14), (Start: 16 @53 has 16 MA's), (Start: 27 @98 has 2 MA's), (41, 188), (47, 242), (50, 272), (63, 365), (67, 413), (84, 524),

Gene: CanesSauce_1 Start: 59, Stop: 535, Start Num: 19

Candidate Starts for CanesSauce_1:

(8, 14), (Start: 19 @59 has 14 MA's), (31, 107), (41, 188), (47, 242), (50, 272), (57, 320), (63, 365), (67, 413), (84, 524),

Gene: Caprice_30 Start: 9811, Stop: 10245, Start Num: 28

Candidate Starts for Caprice_30:

(20, 9775), (24, 9787), (Start: 26 @9802 has 1 MA's), (Start: 28 @9811 has 1 MA's), (Start: 40 @9892 has 5 MA's), (51, 10012), (56, 10042), (63, 10102), (79, 10237),

Gene: Carsonalex_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for Carsonalex_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (57, 319), (63, 364), (85, 526),

Gene: CherryonLim_1 Start: 56, Stop: 547, Start Num: 17

Candidate Starts for CherryonLim_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (44, 221), (45, 224), (50, 272), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: ChickenTender_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for ChickenTender_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (57, 319), (63, 364),

Gene: ChocoMunchkin_1 Start: 59, Stop: 535, Start Num: 19

Candidate Starts for ChocoMunchkin_1:

(8, 14), (Start: 19 @59 has 14 MA's), (31, 107), (41, 188), (47, 242), (50, 272), (57, 320), (63, 365), (67, 413), (84, 524),

Gene: Clarkson_34 Start: 10423, Stop: 10857, Start Num: 30

Candidate Starts for Clarkson_34:

(3, 10288), (Start: 30 @10423 has 10 MA's), (Start: 40 @10504 has 5 MA's), (51, 10624), (56, 10654), (63, 10714), (79, 10849),

Gene: Cleo_2 Start: 447, Stop: 983, Start Num: 7

Candidate Starts for Cleo_2:

(Start: 7 @447 has 1 MA's), (Start: 17 @498 has 18 MA's), (Start: 34 @579 has 1 MA's), (39, 618), (50, 732), (54, 753), (56, 765), (63, 825),

Gene: Corazon_31 Start: 10376, Stop: 10810, Start Num: 30

Candidate Starts for Corazon_31:

(3, 10241), (Start: 30 @10376 has 10 MA's), (Start: 40 @10457 has 5 MA's), (51, 10577), (56, 10607), (63, 10667), (79, 10802),

Gene: Cornie_1 Start: 85, Stop: 549, Start Num: 23

Candidate Starts for Cornie_1:

(Start: 23 @85 has 6 MA's), (32, 133), (Start: 34 @148 has 1 MA's), (35, 154), (38, 172), (39, 187), (43, 226), (46, 277), (48, 295), (57, 361), (58, 379), (59, 385), (60, 388), (61, 397), (62, 403), (63, 409), (64, 418), (76, 535), (80, 544),

Gene: Cozz_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for Cozz_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (57, 319), (63, 364),

Gene: Crater_1 Start: 50, Stop: 484, Start Num: 23

Candidate Starts for Crater_1:

(Start: 23 @50 has 6 MA's), (35, 125), (37, 134), (Start: 40 @167 has 5 MA's), (41, 170), (46, 218), (50, 254), (53, 272), (58, 317), (63, 347), (65, 386),

Gene: Dre3_2 Start: 442, Stop: 927, Start Num: 17

Candidate Starts for Dre3_2:

(Start: 17 @442 has 18 MA's), (Start: 34 @523 has 1 MA's), (39, 562), (50, 676), (54, 697), (56, 709), (63, 769),

Gene: Elinal_1 Start: 56, Stop: 547, Start Num: 17

Candidate Starts for Elinal_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (44, 221), (45, 224), (50, 272), (52, 284), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: Elliott_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for Elliott_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (50, 271), (57, 319), (63, 364),

Gene: Emalyn_1 Start: 52, Stop: 531, Start Num: 16

Candidate Starts for Emalyn_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (47, 241), (50, 271), (57, 319), (63, 364), (67, 412), (85, 526),

Gene: FF47_04 Start: 1302, Stop: 1775, Start Num: 25

Candidate Starts for FF47_04:

(11, 1254), (Start: 25 @1302 has 3 MA's), (35, 1365), (Start: 36 @1368 has 1 MA's), (39, 1398), (49, 1500), (78, 1725), (83, 1746), (86, 1755),

Gene: Feastonyeet_1 Start: 56, Stop: 547, Start Num: 17

Candidate Starts for Feastonyeet_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (44, 221), (45, 224), (50, 272), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: FeliMaine_35 Start: 10424, Stop: 10858, Start Num: 30

Candidate Starts for FeliMaine_35:

(3, 10289), (Start: 30 @10424 has 10 MA's), (Start: 40 @10505 has 5 MA's), (51, 10625), (56, 10655), (63, 10715), (79, 10850),

Gene: Fribs8_2 Start: 426, Stop: 911, Start Num: 17

Candidate Starts for Fribs8_2:

(12, 399), (Start: 17 @426 has 18 MA's), (Start: 34 @507 has 1 MA's), (50, 660), (54, 681), (63, 753), (65, 792),

Gene: GTE2_01 Start: 59, Stop: 535, Start Num: 19

Candidate Starts for GTE2_01:

(8, 14), (Start: 19 @59 has 14 MA's), (41, 188), (47, 242), (50, 272), (53, 290), (63, 365), (67, 413), (84, 524),

Gene: Gattaca_32 Start: 9603, Stop: 10037, Start Num: 30

Candidate Starts for Gattaca_32:

(3, 9468), (Start: 30 @9603 has 10 MA's), (Start: 40 @9684 has 5 MA's), (51, 9804), (56, 9834), (63, 9894), (79, 10029),

Gene: GiKK_1 Start: 49, Stop: 504, Start Num: 19

Candidate Starts for GiKK_1:

(13, 22), (Start: 19 @49 has 14 MA's), (41, 178), (50, 262), (53, 280), (63, 355), (67, 403), (80, 490),

Gene: Gibbous_2 Start: 442, Stop: 927, Start Num: 17

Candidate Starts for Gibbous_2:

(Start: 17 @442 has 18 MA's), (Start: 34 @523 has 1 MA's), (39, 562), (50, 676), (54, 697), (56, 709), (63, 769),

Gene: GoldHunter_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for GoldHunter_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (57, 319), (63, 364),

Gene: GoongGoong_32 Start: 9724, Stop: 10077, Start Num: 40

Candidate Starts for GoongGoong_32:

(Start: 26 @9634 has 1 MA's), (Start: 28 @9643 has 1 MA's), (Start: 40 @9724 has 5 MA's), (51, 9844), (56, 9874), (63, 9934), (79, 10069),

Gene: Hexbug_1 Start: 50, Stop: 505, Start Num: 19

Candidate Starts for Hexbug_1:

(Start: 19 @50 has 14 MA's), (Start: 27 @89 has 2 MA's), (41, 179), (50, 263), (63, 356), (67, 404), (80, 491),

Gene: HippoPololi_2 Start: 449, Stop: 934, Start Num: 17

Candidate Starts for HippoPololi_2:

(5, 380), (13, 425), (Start: 17 @449 has 18 MA's), (Start: 34 @530 has 1 MA's), (39, 569), (50, 683), (54, 704), (56, 716), (63, 776),

Gene: Horseradish_1 Start: 53, Stop: 535, Start Num: 16

Candidate Starts for Horseradish_1:

(8, 14), (Start: 16 @53 has 16 MA's), (Start: 27 @98 has 2 MA's), (41, 188), (47, 242), (50, 272), (63, 365), (67, 413), (84, 524),

Gene: Huphlebuff_35 Start: 10228, Stop: 10662, Start Num: 30

Candidate Starts for Huphlebuff_35:

(3, 10093), (Start: 30 @10228 has 10 MA's), (Start: 40 @10309 has 5 MA's), (51, 10429), (56, 10459), (63, 10519), (79, 10654),

Gene: JacoRen57_1 Start: 190, Stop: 669, Start Num: 25

Candidate Starts for JacoRen57_1:

(2, 61), (6, 91), (Start: 7 @94 has 1 MA's), (15, 154), (Start: 25 @190 has 3 MA's), (35, 253), (38, 271), (56, 424), (58, 457), (68, 538), (72, 574), (75, 598), (78, 607),

Gene: Jamzy_1 Start: 49, Stop: 504, Start Num: 19

Candidate Starts for Jamzy_1:

(Start: 19 @49 has 14 MA's), (Start: 27 @88 has 2 MA's), (41, 178), (50, 262), (62, 349), (63, 355), (67, 403), (80, 490), (81, 499),

Gene: Janeemi_2 Start: 1168, Stop: 1620, Start Num: 29

Candidate Starts for Janeemi_2:

(Start: 29 @1168 has 3 MA's), (71, 1555), (73, 1573), (74, 1594),

Gene: JoieB_34 Start: 10528, Stop: 10881, Start Num: 40

Candidate Starts for JoieB_34:

(3, 10312), (Start: 30 @10447 has 10 MA's), (Start: 40 @10528 has 5 MA's), (51, 10648), (56, 10678), (63, 10738), (79, 10873),

Gene: KayGee_1 Start: 56, Stop: 547, Start Num: 17

Candidate Starts for KayGee_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (44, 221), (45, 224), (50, 272), (52, 284), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: Kuwabara_1 Start: 50, Stop: 484, Start Num: 23

Candidate Starts for Kuwabara_1:

(Start: 23 @50 has 6 MA's), (35, 125), (37, 134), (Start: 40 @167 has 5 MA's), (41, 170), (46, 218), (50, 254), (53, 272), (58, 317), (63, 347), (65, 386),

Gene: Lauer_1 Start: 146, Stop: 547, Start Num: 36

Candidate Starts for Lauer_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (44, 221), (45, 224), (50, 272), (52, 284), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: Lilbit_34 Start: 10424, Stop: 10858, Start Num: 30

Candidate Starts for Lilbit_34:

(3, 10289), (Start: 30 @10424 has 10 MA's), (Start: 40 @10505 has 5 MA's), (51, 10625), (56, 10655), (63, 10715), (79, 10850),

Gene: LittleLaf_33 Start: 10153, Stop: 10587, Start Num: 30

Candidate Starts for LittleLaf_33:

(3, 10018), (Start: 30 @10153 has 10 MA's), (Start: 40 @10234 has 5 MA's), (51, 10354), (56, 10384), (63, 10444), (79, 10579),

Gene: MAnor_1 Start: 56, Stop: 547, Start Num: 17

Candidate Starts for MAnor_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (44, 221), (45, 224), (50, 272), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: MScarn_1 Start: 53, Stop: 535, Start Num: 16

Candidate Starts for MScarn_1:

(8, 14), (Start: 16 @53 has 16 MA's), (Start: 27 @98 has 2 MA's), (41, 188), (47, 242), (50, 272), (63, 365), (67, 413), (84, 524),

Gene: MaVan_2 Start: 426, Stop: 923, Start Num: 17

Candidate Starts for MaVan_2:

(12, 399), (Start: 17 @426 has 18 MA's), (Start: 34 @507 has 1 MA's), (50, 660), (54, 681), (63, 753), (65, 792), (82, 900),

Gene: Maco6_2 Start: 581, Stop: 1054, Start Num: 25

Candidate Starts for Maco6_2:

(11, 533), (Start: 25 @581 has 3 MA's), (35, 644), (Start: 36 @647 has 1 MA's), (39, 677), (49, 779), (78, 1004), (83, 1025), (86, 1034),

Gene: Margaret_1 Start: 49, Stop: 504, Start Num: 19

Candidate Starts for Margaret_1:

(Start: 19 @49 has 14 MA's), (50, 262), (63, 355), (67, 403), (80, 490),

Gene: Marvin_31 Start: 10504, Stop: 10857, Start Num: 40

Candidate Starts for Marvin_31:

(3, 10288), (Start: 30 @10423 has 10 MA's), (Start: 40 @10504 has 5 MA's), (51, 10624), (56, 10654), (63, 10714), (79, 10849),

Gene: Mayweather_2 Start: 513, Stop: 962, Start Num: 27

Candidate Starts for Mayweather_2:

(Start: 17 @474 has 18 MA's), (Start: 27 @513 has 2 MA's), (44, 636), (45, 639), (50, 687), (52, 699), (62, 774), (63, 780), (65, 819), (67, 828), (70, 849),

Gene: MortyNRick_1 Start: 50, Stop: 484, Start Num: 23

Candidate Starts for MortyNRick_1:

(Start: 23 @50 has 6 MA's), (35, 125), (37, 134), (Start: 40 @167 has 5 MA's), (41, 170), (46, 218), (50, 254), (53, 272), (58, 317), (63, 347), (65, 386),

Gene: MosMoris_31 Start: 9684, Stop: 10037, Start Num: 40

Candidate Starts for MosMoris_31:

(3, 9468), (Start: 30 @9603 has 10 MA's), (Start: 40 @9684 has 5 MA's), (51, 9804), (56, 9834), (63, 9894), (79, 10029),

Gene: Muddy_4 Start: 1535, Stop: 2008, Start Num: 25

Candidate Starts for Muddy_4:

(11, 1487), (Start: 25 @1535 has 3 MA's), (35, 1598), (Start: 36 @1601 has 1 MA's), (39, 1631), (49, 1733), (78, 1958), (83, 1979), (86, 1988),

Gene: MunkgeeRoachy_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for MunkgeeRoachy_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (50, 271), (57, 319), (62, 358), (63, 364), (85, 526),

Gene: Nibbles_2 Start: 426, Stop: 923, Start Num: 17

Candidate Starts for Nibbles_2:

(12, 399), (Start: 17 @426 has 18 MA's), (Start: 34 @507 has 1 MA's), (50, 660), (54, 681), (63, 753), (65, 792), (82, 900),

Gene: Nina_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for Nina_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (57, 319), (63, 364),

Gene: NoShow_1 Start: 166, Stop: 675, Start Num: 14

Candidate Starts for NoShow_1:

(1, 82), (4, 115), (Start: 14 @166 has 1 MA's), (21, 199), (31, 244), (35, 277), (47, 379), (55, 436), (58, 478), (63, 508), (69, 562), (78, 625),

Gene: Nodigi_1 Start: 50, Stop: 505, Start Num: 19

Candidate Starts for Nodigi_1:

(Start: 19 @50 has 14 MA's), (Start: 27 @89 has 2 MA's), (41, 179), (50, 263), (63, 356), (67, 404), (80, 491),

Gene: Orla_1 Start: 49, Stop: 504, Start Num: 19

Candidate Starts for Orla_1:

(Start: 19 @49 has 14 MA's), (Start: 27 @88 has 2 MA's), (41, 178), (50, 262), (63, 355), (67, 403), (80, 490),

Gene: Poise_33 Start: 9822, Stop: 10175, Start Num: 40

Candidate Starts for Poise_33:

(Start: 26 @9732 has 1 MA's), (Start: 28 @9741 has 1 MA's), (Start: 40 @9822 has 5 MA's), (51, 9942), (56, 9972), (63, 10032), (79, 10167),

Gene: Pons_1 Start: 56, Stop: 547, Start Num: 17

Candidate Starts for Pons_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (44, 221), (45, 224), (50, 272), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: PotPie_1 Start: 56, Stop: 547, Start Num: 17

Candidate Starts for PotPie_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (45, 224), (50, 272), (52, 284), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: Pringar_33 Start: 10053, Stop: 10487, Start Num: 30

Candidate Starts for Pringar_33:

(3, 9918), (Start: 30 @10053 has 10 MA's), (Start: 40 @10134 has 5 MA's), (51, 10254), (56, 10284), (63, 10344), (79, 10479),

Gene: PsychoKiller_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for PsychoKiller_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (50, 271), (57, 319), (63, 364),

Gene: Quasar_1 Start: 679, Stop: 1164, Start Num: 18

Candidate Starts for Quasar_1:

(Start: 18 @679 has 1 MA's), (Start: 34 @757 has 1 MA's), (41, 808), (47, 862), (50, 892), (52, 904), (57, 940), (63, 985),

Gene: Raela_33 Start: 10296, Stop: 10730, Start Num: 28

Candidate Starts for Raela_33:

(Start: 26 @10287 has 1 MA's), (Start: 28 @10296 has 1 MA's), (Start: 40 @10377 has 5 MA's), (51, 10497), (56, 10527), (63, 10587), (79, 10722),

Gene: RanchParmCat_1 Start: 49, Stop: 504, Start Num: 19

Candidate Starts for RanchParmCat_1:

(Start: 19 @49 has 14 MA's), (50, 262), (63, 355), (67, 403), (80, 490),

Gene: RedBaron_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for RedBaron_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (57, 319), (63, 364), (85, 526),

Gene: RedRaider77_33 Start: 10197, Stop: 10631, Start Num: 30

Candidate Starts for RedRaider77_33:

(3, 10062), (Start: 30 @10197 has 10 MA's), (Start: 40 @10278 has 5 MA's), (51, 10398), (56, 10428), (63, 10488), (79, 10623),

Gene: SPB78_1 Start: 51220, Stop: 426, Start Num: 19

Candidate Starts for SPB78_1:

(10, 51184), (Start: 19 @51220 has 14 MA's), (22, 51229), (Start: 34 @51298 has 1 MA's), (42, 51373), (46, 51406), (66, 51580),

Gene: SheckWes_1 Start: 98, Stop: 547, Start Num: 27

Candidate Starts for SheckWes_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (44, 221), (45, 224), (50, 272), (52, 284), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: SketchMex_1 Start: 52, Stop: 534, Start Num: 16

Candidate Starts for SketchMex_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (63, 364), (67, 412), (84, 523),

Gene: Snek_2 Start: 958, Stop: 1422, Start Num: 29

Candidate Starts for Snek_2:

(Start: 29 @958 has 3 MA's), (57, 1207), (74, 1396), (77, 1405),

Gene: Socotra_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for Socotra_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (57, 319), (63, 364),

Gene: Sopespian_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for Sopespian_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (50, 271), (57, 319), (63, 364),

Gene: Starburst_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for Starburst_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (57, 319), (63, 364),

Gene: SteamedHams_1 Start: 59, Stop: 535, Start Num: 19

Candidate Starts for SteamedHams_1:

(8, 14), (Start: 19 @59 has 14 MA's), (31, 107), (41, 188), (47, 242), (50, 272), (63, 365), (67, 413), (84, 524),

Gene: SummitAcademy_1 Start: 56, Stop: 547, Start Num: 17

Candidate Starts for SummitAcademy_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (44, 221), (45, 224), (50, 272), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: Survivors_2 Start: 426, Stop: 911, Start Num: 17

Candidate Starts for Survivors_2:

(12, 399), (Start: 17 @426 has 18 MA's), (Start: 34 @507 has 1 MA's), (50, 660), (54, 681), (63, 753), (65, 792),

Gene: SweatNTears_2 Start: 757, Stop: 1155, Start Num: 34

Candidate Starts for SweatNTears_2:

(Start: 18 @679 has 1 MA's), (Start: 34 @757 has 1 MA's), (41, 808), (47, 862), (50, 892), (52, 904), (57, 940), (63, 985), (84, 1144),

Gene: Tesla_32 Start: 10046, Stop: 10480, Start Num: 30

Candidate Starts for Tesla_32:

(3, 9911), (Start: 30 @10046 has 10 MA's), (Start: 40 @10127 has 5 MA's), (51, 10247), (56, 10277), (63, 10337), (79, 10472),

Gene: Tolls_1 Start: 59, Stop: 535, Start Num: 19

Candidate Starts for Tolls_1:

(8, 14), (Start: 19 @59 has 14 MA's), (31, 107), (41, 188), (47, 242), (50, 272), (57, 320), (63, 365), (67, 413), (84, 524),

Gene: Troje_1 Start: 53, Stop: 535, Start Num: 16

Candidate Starts for Troje_1:

(8, 14), (Start: 16 @53 has 16 MA's), (Start: 27 @98 has 2 MA's), (41, 188), (47, 242), (50, 272), (63, 365), (67, 413), (84, 524),

Gene: Tweety19_2 Start: 958, Stop: 1422, Start Num: 29

Candidate Starts for Tweety19_2:

(Start: 29 @958 has 3 MA's), (57, 1207), (74, 1396), (77, 1405),

Gene: Typhonomachy_1 Start: 52, Stop: 543, Start Num: 16

Candidate Starts for Typhonomachy_1:

(9, 22), (Start: 16 @52 has 16 MA's), (Start: 27 @97 has 2 MA's), (41, 187), (45, 223), (47, 241), (50, 271), (57, 319), (63, 364),

Gene: VWB_1 Start: 1, Stop: 480, Start Num: 19

Candidate Starts for VWB_1:

(Start: 19 @1 has 14 MA's), (22, 10), (33, 76), (42, 154), (46, 187), (66, 361), (67, 364),

Gene: VasuNzinga_33 Start: 9630, Stop: 10064, Start Num: 30

Candidate Starts for VasuNzinga_33:

(3, 9495), (Start: 30 @9630 has 10 MA's), (Start: 40 @9711 has 5 MA's), (51, 9831), (56, 9861), (63, 9921), (79, 10056),

Gene: Vine_2 Start: 681, Stop: 1172, Start Num: 17

Candidate Starts for Vine_2:

(Start: 17 @681 has 18 MA's), (31, 732), (Start: 34 @762 has 1 MA's), (41, 813), (45, 849), (50, 897), (52, 909), (57, 945), (62, 984), (63, 990), (65, 1029), (67, 1038), (70, 1059),

Gene: Yakult_1 Start: 48, Stop: 503, Start Num: 19

Candidate Starts for Yakult_1:

(Start: 19 @48 has 14 MA's), (Start: 36 @135 has 1 MA's), (41, 177), (50, 261), (63, 354), (67, 402), (80, 489),

Gene: Yarn_1 Start: 59, Stop: 535, Start Num: 19

Candidate Starts for Yarn_1:

(8, 14), (Start: 19 @59 has 14 MA's), (31, 107), (41, 188), (47, 242), (50, 272), (57, 320), (63, 365), (67, 413), (84, 524),

Gene: Yucky_1 Start: 98, Stop: 547, Start Num: 27

Candidate Starts for Yucky_1:

(Start: 17 @56 has 18 MA's), (Start: 27 @98 has 2 MA's), (Start: 36 @146 has 1 MA's), (45, 224), (50, 272), (52, 284), (62, 359), (63, 365), (65, 404), (67, 413), (70, 434),

Gene: Yummy_1 Start: 53, Stop: 535, Start Num: 16

Candidate Starts for Yummy_1:

(8, 14), (Start: 16 @53 has 16 MA's), (Start: 27 @98 has 2 MA's), (41, 188), (47, 242), (50, 272), (63, 365), (67, 413), (84, 524),

Gene: Zareef_2 Start: 426, Stop: 923, Start Num: 17

Candidate Starts for Zareef_2:

(12, 399), (Start: 17 @426 has 18 MA's), (Start: 34 @507 has 1 MA's), (50, 660), (54, 681), (63, 753), (65, 792), (82, 900),