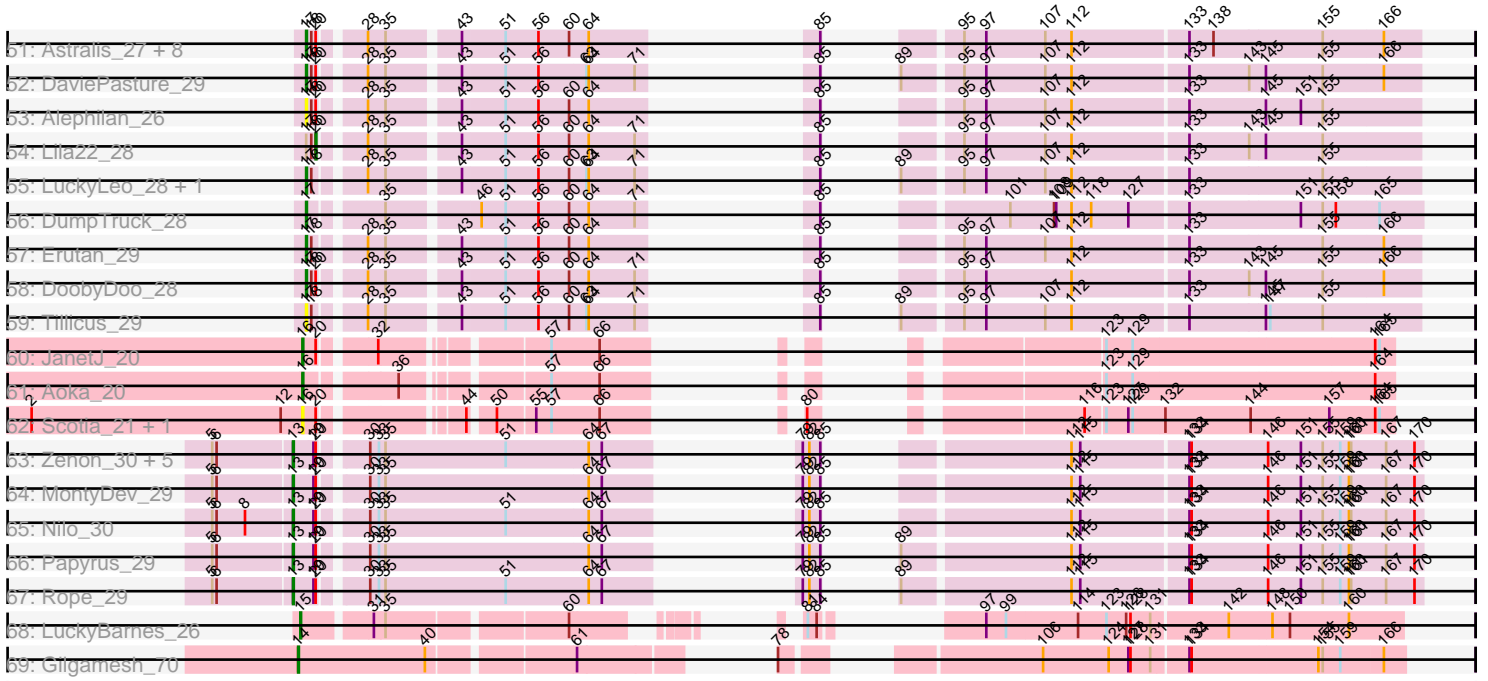


Pham 215934



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 215934 Report

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

Pham number 215934 has 140 members, 32 are drafts.

Phages represented in each track:

- Track 1 : Fowlmouth_23
- Track 2 : MrMiyagi_23
- Track 3 : Cuke_22
- Track 4 : Leopard_38
- Track 5 : Onyinye_39, Aikoy_38
- Track 6 : Subaru_20, Elezi_19, Eraser_19, London_19, Jstan_20, Niobe_19, Asa16_19
- Track 7 : Soondubu_18
- Track 8 : Exile_18
- Track 9 : AinMach_18
- Track 10 : Cassia_19
- Track 11 : Joemato_19, AGrandiflora_19, Lego_19, YesChef_19, Tutumahutu_19, Tbone_19, Warda_19, Powerpuff_19, Cyan_19, Mudpuppy_19, Simpson_21
- Track 12 : TforTroy_19
- Track 13 : lter_19, Ascela_19
- Track 14 : Turab_19, Adumb2043_19, AEgle_19
- Track 15 : Shaffner_20, JuneStar_19
- Track 16 : Pixelle_19
- Track 17 : Tuck_20, Community_19
- Track 18 : Lizalica_19
- Track 19 : Berrie_19
- Track 20 : Nitro_19
- Track 21 : Phives_20
- Track 22 : Tian_19, Amyev_19
- Track 23 : Pumpkins_19
- Track 24 : Kaylissa_19, JohnDoe_19
- Track 25 : Tallboi_19
- Track 26 : Janeemi_20
- Track 27 : Yang_19
- Track 28 : Maureen_18, Liebe_18
- Track 29 : MaGuCo_18
- Track 30 : Emotion_18
- Track 31 : MiniMommy_18, JasmineDragon_18, ShakeltOph_19
- Track 32 : LadyAstra_19
- Track 33 : VroomVroom_18
- Track 34 : Ashes_19, RockScotty_19, Halsey_19, Moss_19
- Track 35 : Stuu_20, Beaupre_19, Gumpizza_19, Giorgio_19

- Track 36 : SpecialK_19
- Track 37 : Mysterium_19
- Track 38 : Cappuccino_19, Kalimba_19, Donkey_19, Gambol_19, Sooty_19
- Track 39 : Sabourin_19
- Track 40 : Madi_24, BiteSize_24, Terapin_24, Beyoncage_24, Djokovic_24
- Track 41 : Suzy_24
- Track 42 : LilyPad_25
- Track 43 : Sienna_24
- Track 44 : LittleFella_26
- Track 45 : Yikes_30, OtterstedtS21_29, MoiGyank_31, Sampudon_29, Jalebi_28, LavAbarElk_27
- Track 46 : NorManre_30, Sadboi_29, Fulcrum_30, Gibbin_30, Mima20_29, Patos_30, GretelLyn_29, GOATification_30, Ranch_29
- Track 47 : BirthdayBoy_30, Zany_28
- Track 48 : Xenia2_29
- Track 49 : ParvusTarda_29, Wojtek_28
- Track 50 : Lambo_29
- Track 51 : Astralis_27, Avian_27, Genamy16_29, Rumi_28, Jamemuya19_27, RazorC_27, Alyssmiracle_29, Stormer_28, NovaSharks_28
- Track 52 : DaviePasture_29
- Track 53 : Alephilan_26
- Track 54 : Lila22_28
- Track 55 : LuckyLeo_28, Apeppi_26
- Track 56 : DumpTruck_28
- Track 57 : Erutan_29
- Track 58 : DoobyDoo_28
- Track 59 : Tillicus_29
- Track 60 : JanetJ_20
- Track 61 : Aoka_20
- Track 62 : Scotia_21, NoSwimming_21
- Track 63 : Zenon_30, Yelo_29, Send513_29, Candle_29, Weiss13_29, Riparian_29
- Track 64 : MontyDev_29
- Track 65 : Nilo_30
- Track 66 : Papyrus_29
- Track 67 : Rope_29
- Track 68 : LuckyBarnes_26
- Track 69 : Gilgamesh_70

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

The start number called the most often in the published annotations is 15, it was called in 47 of the 108 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AEgle_19, AGrandiflora_19, Adumb2043_19, AinMach_18, Amyev_19, Asa16_19, Ascela_19, Ashes_19, Berrie_19, Cappuccino_19, Cassia_19, Community_19, Cyan_19, Donkey_19, Elezi_19, Eraser_19, Exile_18, Gambol_19, Halsey_19, Iter_19, Janeemi_20, Joemato_19, JohnDoe_19, Jstan_20, JuneStar_19, Kalimba_19, Kaylissa_19, Lego_19, Liebe_18, Lizalica_19, London_19, LuckyBarnes_26, MaGuCo_18, Maureen_18, Moss_19, Mudpuppy_19,

Mysterium_19, Niobe_19, Nitro_19, Phives_20, Pixelle_19, Powerpuff_19, Pumpkins_19, RockScotty_19, Shaffner_20, Simpson_21, Soondubu_18, Sooty_19, Subaru_20, Tallboi_19, Tbone_19, TforTroy_19, Tian_19, Tuck_20, Turab_19, Tutumahutu_19, Warda_19, Yang_19, YesChef_19,

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

- Beaupre_19, Giorgio_19, Gumpizza_19, Sabourin_19, SpecialK_19, Stuu_20,

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

- Aikoy_38, Alephilan_26, Alyssmiracle_29, Aoka_20, Apeppi_26, Astralis_27, Avian_27, Beyoncage_24, BirthdayBoy_30, BiteSize_24, Candle_29, Cuke_22, DaviePasture_29, Djokovic_24, DoobyDoo_28, DumpTruck_28, Emotion_18, Erutan_29, Fowlmouth_23, Fulcrum_30, GOATification_30, Genamy16_29, Gibbin_30, Gilgamesh_70, Gretellyn_29, Jalebi_28, Jamemuya19_27, JanetJ_20, JasmineDragon_18, LadyAstra_19, Lambo_29, LavAbarElk_27, Leopard_38, Lila22_28, LilyPad_25, LittleFella_26, LuckyLeo_28, Madi_24, Mima20_29, MiniMommy_18, MoiGyank_31, MontyDev_29, MrMiyagi_23, Nilo_30, NoSwimming_21, NorManre_30, NovaSharks_28, Onyinye_39, OtterstedtS21_29, Papyrus_29, ParvusTarda_29, Patos_30, Ranch_29, RazorC_27, Riparian_29, Rope_29, Rumi_28, Sadboi_29, Sampudon_29, Scotia_21, Send513_29, ShakeltOph_19, Sienna_24, Stormer_28, Suzy_24, Terapin_24, Tillicus_29, VroomVroom_18, Weiss13_29, Wojtek_28, Xenia2_29, Yelo_29, Yikes_30, Zany_28, Zenon_30,

Summary by start number:

Start 10:

- Found in 3 of 140 (2.1%) of genes in pham
- Manual Annotations of this start: 3 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aikoy_38 (AE), Leopard_38 (AE), Onyinye_39 (AE),

Start 13:

- Found in 13 of 140 (9.3%) of genes in pham
- Manual Annotations of this start: 12 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Candle_29 (R), Cuke_22 (AC), Fowlmouth_23 (AC), MontyDev_29 (R), MrMiyagi_23 (AC), Nilo_30 (R), Papyrus_29 (R), Riparian_29 (R), Rope_29 (R), Send513_29 (R), Weiss13_29 (R), Yelo_29 (R), Zenon_30 (R),

Start 14:

- Found in 1 of 140 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gilgamesh_70 (singleton),

Start 15:

- Found in 65 of 140 (46.4%) of genes in pham
- Manual Annotations of this start: 47 of 108
- Called 90.8% of time when present

- Phage (with cluster) where this start called: AEgle_19 (AZ1), AGrandiflora_19 (AZ1), Adumb2043_19 (AZ1), AinMach_18 (AZ), Amyev_19 (AZ1), Asa16_19 (AZ1), Ascela_19 (AZ1), Ashes_19 (AZ5), Berrie_19 (AZ1), Cappuccino_19 (AZ5), Cassia_19 (AZ1), Community_19 (AZ1), Cyan_19 (AZ1), Donkey_19 (AZ5), Elezi_19 (AZ1), Eraser_19 (AZ1), Exile_18 (AZ), Gambol_19 (AZ5), Halsey_19 (AZ5), Iter_19 (AZ1), Janeemi_20 (AZ1), Joemato_19 (AZ1), JohnDoe_19 (AZ1), Jstan_20 (AZ1), JuneStar_19 (AZ1), Kalimba_19 (AZ5), Kaylissa_19 (AZ1), Lego_19 (AZ1), Liebe_18 (AZ2), Lizalica_19 (AZ1), London_19 (AZ1), LuckyBarnes_26 (singleton), MaGuCo_18 (AZ2), Maureen_18 (AZ2), Moss_19 (AZ5), Mudpuppy_19 (AZ1), Mysterium_19 (AZ5), Niobe_19 (AZ1), Nitro_19 (AZ1), Phives_20 (AZ1), Pixelle_19 (AZ1), Powerpuff_19 (AZ1), Pumpkins_19 (AZ1), RockScotty_19 (AZ5), Shaffner_20 (AZ1), Simpson_21 (AZ1), Soondubu_18 (AZ), Sooty_19 (AZ5), Subaru_20 (AZ), Tallboi_19 (AZ1), Tbone_19 (AZ1), TforTroy_19 (AZ1), Tian_19 (AZ1), Tuck_20 (AZ1), Turab_19 (AZ1), Tutumahutu_19 (AZ1), Warda_19 (AZ1), Yang_19 (AZ1), YesChef_19 (AZ1),

Start 16:

- Found in 10 of 140 (7.1%) of genes in pham
- Manual Annotations of this start: 5 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aoka_20 (FO), Emotion_18 (AZ4), JanetJ_20 (FO), JasmineDragon_18 (AZ4), LadyAstra_19 (AZ4), MiniMommy_18 (AZ4), NoSwimming_21 (FO), Scotia_21 (FO), ShakeltOph_19 (AZ4), VroomVroom_18 (AZ4),

Start 17:

- Found in 48 of 140 (34.3%) of genes in pham
- Manual Annotations of this start: 38 of 108
- Called 97.9% of time when present
- Phage (with cluster) where this start called: Alephilan_26 (DV), Alyssamiracle_29 (DV), Apeppi_26 (DV), Astralis_27 (DV), Avian_27 (DV), Beyoncage_24 (DG1), BirthdayBoy_30 (DV), BiteSize_24 (DG1), DaviePasture_29 (DV), Djokovic_24 (DG1), DoobyDoo_28 (DV), DumpTruck_28 (DV), Erutan_29 (DV), Fulcrum_30 (DV), GOATification_30 (DV), Genamy16_29 (DV), Gibbin_30 (DV), GretellLyn_29 (DV), Jalebi_28 (DV), Jamemuya19_27 (DV), Lambo_29 (DV), LavAbarElk_27 (DV), LilyPad_25 (DG1), LittleFella_26 (DG2), LuckyLeo_28 (DV), Madi_24 (DG1), Mima20_29 (DV), MoiGyank_31 (DV), NorManre_30 (DV), NovaSharks_28 (DV), OtterstedtS21_29 (DV), ParvusTarda_29 (DV), Patos_30 (DV), Ranch_29 (DV), RazorC_27 (DV), Rumi_28 (DV), Sadboi_29 (DV), Sampudon_29 (DV), Sienna_24 (DG1), Stormer_28 (DV), Suzy_24 (DG1), Terapin_24 (DG1), Tillicus_29 (DV), Wojtek_28 (DV), Xenia2_29 (DV), Yikes_30 (DV), Zany_28 (DV),

Start 20:

- Found in 45 of 140 (32.1%) of genes in pham
- Manual Annotations of this start: 1 of 108
- Called 2.2% of time when present
- Phage (with cluster) where this start called: Lila22_28 (DV),

Start 24:

- Found in 16 of 140 (11.4%) of genes in pham
- Manual Annotations of this start: 1 of 108
- Called 37.5% of time when present

- Phage (with cluster) where this start called: Beaupre_19 (AZ5), Giorgio_19 (AZ5), Gumpizza_19 (AZ5), Sabourin_19 (AZ5), SpecialK_19 (AZ5), Stuu_20 (AZ5),

Summary by clusters:

There are 13 clusters represented in this pham: AC, AE, singleton, DG2, AZ2, DG1, DV, AZ1, R, AZ, AZ4, AZ5, FO,

Info for manual annotations of cluster AC:

- Start number 13 was manually annotated 3 times for cluster AC.

Info for manual annotations of cluster AE:

- Start number 10 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster AZ:

- Start number 15 was manually annotated 1 time for cluster AZ.

Info for manual annotations of cluster AZ1:

- Start number 15 was manually annotated 33 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 15 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster AZ4:

- Start number 16 was manually annotated 3 times for cluster AZ4.

Info for manual annotations of cluster AZ5:

- Start number 15 was manually annotated 9 times for cluster AZ5.
- Start number 24 was manually annotated 1 time for cluster AZ5.

Info for manual annotations of cluster DG1:

- Start number 17 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 17 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 17 was manually annotated 29 times for cluster DV.
- Start number 20 was manually annotated 1 time for cluster DV.

Info for manual annotations of cluster FO:

- Start number 16 was manually annotated 2 times for cluster FO.

Info for manual annotations of cluster R:

- Start number 13 was manually annotated 9 times for cluster R.

Gene Information:

Gene: AEgle_19 Start: 14931, Stop: 16052, Start Num: 15

Candidate Starts for AEgle_19:

(Start: 15 @14931 has 47 MA's), (25, 14991), (38, 15054), (40, 15075), (72, 15339), (91, 15423), (137, 15783), (139, 15801), (146, 15861),

Gene: AGrandiflora_19 Start: 14916, Stop: 16037, Start Num: 15

Candidate Starts for AGrandiflora_19:

(Start: 15 @14916 has 47 MA's), (25, 14976), (38, 15039), (40, 15060), (67, 15273), (72, 15324), (73, 15330), (106, 15552), (137, 15768), (139, 15786), (146, 15846),

Gene: Adumb2043_19 Start: 14930, Stop: 16051, Start Num: 15

Candidate Starts for Adumb2043_19:

(Start: 15 @14930 has 47 MA's), (25, 14990), (38, 15053), (40, 15074), (72, 15338), (91, 15422), (137, 15782), (139, 15800), (146, 15860),

Gene: Aikoy_38 Start: 28234, Stop: 29478, Start Num: 10

Candidate Starts for Aikoy_38:

(7, 28186), (9, 28222), (Start: 10 @28234 has 3 MA's), (28, 28333), (34, 28351), (46, 28468), (54, 28537), (58, 28570), (59, 28579), (62, 28606), (69, 28639), (85, 28714), (96, 28810), (99, 28846), (107, 28900), (110, 28921), (113, 28939), (114, 28945), (115, 28948), (117, 28960), (134, 29092), (135, 29095), (153, 29257), (155, 29269), (157, 29278), (171, 29413), (172, 29455),

Gene: AinMach_18 Start: 14089, Stop: 15219, Start Num: 15

Candidate Starts for AinMach_18:

(Start: 15 @14089 has 47 MA's), (25, 14158), (53, 14341), (59, 14404), (74, 14509), (76, 14524), (100, 14692), (115, 14788), (118, 14803), (119, 14806), (122, 14818), (127, 14854), (131, 14884), (133, 14938), (136, 14947), (163, 15163), (164, 15190),

Gene: Alephilan_26 Start: 24820, Stop: 25944, Start Num: 17

Candidate Starts for Alephilan_26:

(Start: 17 @24820 has 38 MA's), (18, 24826), (Start: 20 @24832 has 1 MA's), (28, 24877), (35, 24901), (43, 24988), (51, 25045), (56, 25090), (60, 25132), (64, 25156), (85, 25258), (95, 25333), (97, 25363), (107, 25444), (112, 25480), (133, 25633), (145, 25735), (151, 25783), (155, 25813),

Gene: Alyssamiracle_29 Start: 23630, Stop: 24754, Start Num: 17

Candidate Starts for Alyssamiracle_29:

(Start: 17 @23630 has 38 MA's), (18, 23636), (Start: 20 @23642 has 1 MA's), (28, 23687), (35, 23711), (43, 23798), (51, 23855), (56, 23900), (60, 23942), (64, 23966), (85, 24068), (95, 24143), (97, 24173), (107, 24254), (112, 24290), (133, 24443), (138, 24476), (155, 24623), (166, 24704),

Gene: Amyev_19 Start: 14951, Stop: 16393, Start Num: 15

Candidate Starts for Amyev_19:

(Start: 15 @14951 has 47 MA's), (25, 15011), (27, 15017), (38, 15074), (40, 15095), (66, 15305), (71, 15353), (77, 15473), (88, 15692), (126, 16022), (137, 16124), (139, 16142), (167, 16361),

Gene: Aoka_20 Start: 16034, Stop: 17083, Start Num: 16

Candidate Starts for Aoka_20:

(Start: 16 @16034 has 5 MA's), (36, 16139), (57, 16304), (66, 16370), (123, 16700), (129, 16736), (164, 17057),

Gene: Apeppi_26 Start: 24963, Stop: 26087, Start Num: 17

Candidate Starts for Apeppi_26:

(Start: 17 @24963 has 38 MA's), (18, 24969), (28, 25020), (35, 25044), (43, 25131), (51, 25188), (56, 25233), (60, 25275), (63, 25296), (64, 25299), (71, 25362), (85, 25401), (89, 25404), (95, 25476), (97, 25506), (107, 25587), (112, 25623), (133, 25776), (155, 25956),

Gene: Asa16_19 Start: 14900, Stop: 16021, Start Num: 15

Candidate Starts for Asa16_19:

(Start: 15 @14900 has 47 MA's), (25, 14960), (27, 14966), (38, 15023), (40, 15044), (72, 15308), (139, 15770),

Gene: Ascela_19 Start: 14928, Stop: 16049, Start Num: 15

Candidate Starts for Ascela_19:

(Start: 15 @14928 has 47 MA's), (38, 15051), (40, 15072), (65, 15276), (73, 15342), (139, 15798), (146, 15858),

Gene: Ashes_19 Start: 14619, Stop: 16067, Start Num: 15

Candidate Starts for Ashes_19:

(Start: 15 @14619 has 47 MA's), (Start: 24 @14673 has 1 MA's), (72, 15027), (73, 15033), (105, 15579), (114, 15630), (141, 15825),

Gene: Astralis_27 Start: 23220, Stop: 24344, Start Num: 17

Candidate Starts for Astralis_27:

(Start: 17 @23220 has 38 MA's), (18, 23226), (Start: 20 @23232 has 1 MA's), (28, 23277), (35, 23301), (43, 23388), (51, 23445), (56, 23490), (60, 23532), (64, 23556), (85, 23658), (95, 23733), (97, 23763), (107, 23844), (112, 23880), (133, 24033), (138, 24066), (155, 24213), (166, 24294),

Gene: Avian_27 Start: 23612, Stop: 24736, Start Num: 17

Candidate Starts for Avian_27:

(Start: 17 @23612 has 38 MA's), (18, 23618), (Start: 20 @23624 has 1 MA's), (28, 23669), (35, 23693), (43, 23780), (51, 23837), (56, 23882), (60, 23924), (64, 23948), (85, 24050), (95, 24125), (97, 24155), (107, 24236), (112, 24272), (133, 24425), (138, 24458), (155, 24605), (166, 24686),

Gene: Beaupre_19 Start: 14674, Stop: 16068, Start Num: 24

Candidate Starts for Beaupre_19:

(Start: 15 @14620 has 47 MA's), (Start: 24 @14674 has 1 MA's), (70, 14998), (72, 15028), (105, 15580), (114, 15631), (141, 15826),

Gene: Berrie_19 Start: 15065, Stop: 16186, Start Num: 15

Candidate Starts for Berrie_19:

(Start: 15 @15065 has 47 MA's), (25, 15125), (27, 15131), (38, 15188), (72, 15473), (73, 15479), (139, 15935), (146, 15995),

Gene: Beyoncage_24 Start: 20204, Stop: 21337, Start Num: 17

Candidate Starts for Beyoncage_24:

(Start: 17 @20204 has 38 MA's), (38, 20321), (40, 20342), (42, 20354), (43, 20375), (45, 20384), (48, 20417), (64, 20546), (72, 20615), (98, 20765), (107, 20834), (111, 20858), (120, 20903), (124, 20921), (126, 20945), (130, 20975), (147, 21131), (149, 21137), (155, 21203), (156, 21209), (161, 21242), (165, 21281),

Gene: BirthdayBoy_30 Start: 25673, Stop: 26797, Start Num: 17

Candidate Starts for BirthdayBoy_30:

(Start: 17 @25673 has 38 MA's), (18, 25679), (Start: 20 @25685 has 1 MA's), (28, 25730), (35, 25754), (43, 25841), (51, 25898), (56, 25943), (60, 25985), (64, 26009), (71, 26072), (85, 26111), (95, 26186), (97, 26216), (107, 26297), (112, 26333), (133, 26486), (155, 26666), (166, 26747),

Gene: BiteSize_24 Start: 20204, Stop: 21337, Start Num: 17

Candidate Starts for BiteSize_24:

(Start: 17 @20204 has 38 MA's), (38, 20321), (40, 20342), (42, 20354), (43, 20375), (45, 20384), (48, 20417), (64, 20546), (72, 20615), (98, 20765), (107, 20834), (111, 20858), (120, 20903), (124, 20921), (126, 20945), (130, 20975), (147, 21131), (149, 21137), (155, 21203), (156, 21209), (161, 21242), (165, 21281),

Gene: Candle_29 Start: 23449, Stop: 24636, Start Num: 13

Candidate Starts for Candle_29:

(5, 23344), (6, 23350), (Start: 13 @23449 has 12 MA's), (19, 23476), (Start: 20 @23479 has 1 MA's), (30, 23524), (33, 23536), (35, 23545), (51, 23710), (64, 23821), (67, 23839), (79, 23917), (82, 23926), (85, 23941), (112, 24163), (115, 24175), (133, 24316), (134, 24319), (146, 24424), (151, 24469), (155, 24499), (159, 24523), (160, 24535), (161, 24538), (167, 24586), (170, 24625),

Gene: Cappuccino_19 Start: 14527, Stop: 15975, Start Num: 15

Candidate Starts for Cappuccino_19:

(Start: 15 @14527 has 47 MA's), (Start: 24 @14581 has 1 MA's), (70, 14905), (72, 14935), (105, 15487), (141, 15733),

Gene: Cassia_19 Start: 15026, Stop: 16147, Start Num: 15

Candidate Starts for Cassia_19:

(Start: 15 @15026 has 47 MA's), (39, 15161), (40, 15170), (51, 15260), (72, 15434), (139, 15896),

Gene: Community_19 Start: 16147, Stop: 17589, Start Num: 15

Candidate Starts for Community_19:

(Start: 15 @16147 has 47 MA's), (25, 16207), (27, 16213), (38, 16270), (66, 16501), (73, 16561), (86, 16855), (87, 16876), (139, 17338), (148, 17404),

Gene: Cuke_22 Start: 19244, Stop: 20422, Start Num: 13

Candidate Starts for Cuke_22:

(11, 19232), (Start: 13 @19244 has 12 MA's), (19, 19271), (21, 19283), (23, 19298), (33, 19331), (41, 19400), (51, 19505), (54, 19541), (85, 19718), (97, 19823), (112, 19940), (115, 19952), (134, 20096), (155, 20273), (161, 20312), (162, 20315), (164, 20345), (167, 20360),

Gene: Cyan_19 Start: 14919, Stop: 16040, Start Num: 15

Candidate Starts for Cyan_19:

(Start: 15 @14919 has 47 MA's), (25, 14979), (38, 15042), (40, 15063), (67, 15276), (72, 15327), (73, 15333), (106, 15555), (137, 15771), (139, 15789), (146, 15849),

Gene: DaviePasture_29 Start: 25439, Stop: 26563, Start Num: 17

Candidate Starts for DaviePasture_29:

(Start: 17 @25439 has 38 MA's), (18, 25445), (Start: 20 @25451 has 1 MA's), (28, 25496), (35, 25520), (43, 25607), (51, 25664), (56, 25709), (63, 25772), (64, 25775), (71, 25838), (85, 25877), (89, 25880), (95, 25952), (97, 25982), (107, 26063), (112, 26099), (133, 26252), (143, 26333), (145, 26354), (155, 26432), (166, 26513),

Gene: Djokovic_24 Start: 20204, Stop: 21337, Start Num: 17

Candidate Starts for Djokovic_24:

(Start: 17 @20204 has 38 MA's), (38, 20321), (40, 20342), (42, 20354), (43, 20375), (45, 20384), (48, 20417), (64, 20546), (72, 20615), (98, 20765), (107, 20834), (111, 20858), (120, 20903), (124, 20921), (126, 20945), (130, 20975), (147, 21131), (149, 21137), (155, 21203), (156, 21209), (161, 21242), (165, 21281),

Gene: Donkey_19 Start: 14527, Stop: 15975, Start Num: 15

Candidate Starts for Donkey_19:

(Start: 15 @14527 has 47 MA's), (Start: 24 @14581 has 1 MA's), (70, 14905), (72, 14935), (105, 15487), (141, 15733),

Gene: DoobyDoo_28 Start: 24595, Stop: 25719, Start Num: 17

Candidate Starts for DoobyDoo_28:

(Start: 17 @24595 has 38 MA's), (18, 24601), (Start: 20 @24607 has 1 MA's), (28, 24652), (35, 24676), (43, 24763), (51, 24820), (56, 24865), (60, 24907), (64, 24931), (71, 24994), (85, 25033), (95, 25108), (97, 25138), (112, 25255), (133, 25408), (143, 25489), (145, 25510), (155, 25588), (166, 25669),

Gene: DumpTruck_28 Start: 24905, Stop: 26032, Start Num: 17

Candidate Starts for DumpTruck_28:

(Start: 17 @24905 has 38 MA's), (35, 24986), (46, 25097), (51, 25130), (56, 25175), (60, 25217), (64, 25241), (71, 25304), (85, 25343), (101, 25481), (108, 25541), (109, 25544), (112, 25565), (118, 25592), (127, 25643), (133, 25718), (151, 25868), (155, 25898), (158, 25916), (165, 25973),

Gene: Elezi_19 Start: 14901, Stop: 16022, Start Num: 15

Candidate Starts for Elezi_19:

(Start: 15 @14901 has 47 MA's), (25, 14961), (27, 14967), (38, 15024), (40, 15045), (72, 15309), (139, 15771),

Gene: Emotion_18 Start: 13147, Stop: 14427, Start Num: 16

Candidate Starts for Emotion_18:

(Start: 16 @13147 has 5 MA's), (40, 13297), (100, 13915), (114, 14008), (131, 14107),

Gene: Eraser_19 Start: 14901, Stop: 16022, Start Num: 15

Candidate Starts for Eraser_19:

(Start: 15 @14901 has 47 MA's), (25, 14961), (27, 14967), (38, 15024), (40, 15045), (72, 15309), (139, 15771),

Gene: Erutan_29 Start: 25117, Stop: 26241, Start Num: 17

Candidate Starts for Erutan_29:

(Start: 17 @25117 has 38 MA's), (18, 25123), (28, 25174), (35, 25198), (43, 25285), (51, 25342), (56, 25387), (60, 25429), (64, 25453), (85, 25555), (95, 25630), (97, 25660), (107, 25741), (112, 25777), (133, 25930), (155, 26110), (166, 26191),

Gene: Exile_18 Start: 15565, Stop: 16650, Start Num: 15

Candidate Starts for Exile_18:

(Start: 15 @15565 has 47 MA's), (22, 15619), (59, 15877), (65, 15919), (103, 16138), (131, 16315), (133, 16360), (140, 16408), (163, 16585), (164, 16612), (169, 16642),

Gene: Fowlmouth_23 Start: 19374, Stop: 20546, Start Num: 13

Candidate Starts for Fowlmouth_23:

(11, 19362), (Start: 13 @19374 has 12 MA's), (26, 19443), (34, 19464), (51, 19635), (54, 19671), (67, 19764), (73, 19821), (85, 19848), (90, 19881), (94, 19917), (97, 19953), (110, 20055), (112, 20070), (134, 20226), (155, 20403), (157, 20412), (158, 20421), (161, 20442), (162, 20445), (167, 20490),

Gene: Fulcrum_30 Start: 25641, Stop: 26765, Start Num: 17

Candidate Starts for Fulcrum_30:

(Start: 17 @25641 has 38 MA's), (18, 25647), (Start: 20 @25653 has 1 MA's), (28, 25698), (35, 25722), (43, 25809), (51, 25866), (56, 25911), (60, 25953), (64, 25977), (71, 26040), (85, 26079), (95, 26154), (97, 26184), (107, 26265), (112, 26301), (133, 26454), (143, 26535), (145, 26556), (155, 26634), (166, 26715),

Gene: GOATification_30 Start: 25641, Stop: 26765, Start Num: 17

Candidate Starts for GOATification_30:

(Start: 17 @25641 has 38 MA's), (18, 25647), (Start: 20 @25653 has 1 MA's), (28, 25698), (35, 25722), (43, 25809), (51, 25866), (56, 25911), (60, 25953), (64, 25977), (71, 26040), (85, 26079), (95, 26154), (97, 26184), (107, 26265), (112, 26301), (133, 26454), (143, 26535), (145, 26556), (155, 26634), (166, 26715),

Gene: Gambol_19 Start: 14527, Stop: 15975, Start Num: 15

Candidate Starts for Gambol_19:

(Start: 15 @14527 has 47 MA's), (Start: 24 @14581 has 1 MA's), (70, 14905), (72, 14935), (105, 15487), (141, 15733),

Gene: Genamy16_29 Start: 23630, Stop: 24754, Start Num: 17

Candidate Starts for Genamy16_29:

(Start: 17 @23630 has 38 MA's), (18, 23636), (Start: 20 @23642 has 1 MA's), (28, 23687), (35, 23711), (43, 23798), (51, 23855), (56, 23900), (60, 23942), (64, 23966), (85, 24068), (95, 24143), (97, 24173), (107, 24254), (112, 24290), (133, 24443), (138, 24476), (155, 24623), (166, 24704),

Gene: Gibbin_30 Start: 25722, Stop: 26846, Start Num: 17

Candidate Starts for Gibbin_30:

(Start: 17 @25722 has 38 MA's), (18, 25728), (Start: 20 @25734 has 1 MA's), (28, 25779), (35, 25803), (43, 25890), (51, 25947), (56, 25992), (60, 26034), (64, 26058), (71, 26121), (85, 26160), (95, 26235), (97, 26265), (107, 26346), (112, 26382), (133, 26535), (143, 26616), (145, 26637), (155, 26715), (166, 26796),

Gene: Gilgamesh_70 Start: 64726, Stop: 65949, Start Num: 14

Candidate Starts for Gilgamesh_70:

(Start: 14 @64726 has 1 MA's), (40, 64900), (61, 65080), (78, 65218), (106, 65470), (124, 65560), (127, 65587), (128, 65590), (131, 65617), (133, 65662), (134, 65665), (154, 65833), (155, 65839), (159, 65863), (166, 65920),

Gene: Giorgio_19 Start: 14681, Stop: 16075, Start Num: 24

Candidate Starts for Giorgio_19:

(Start: 15 @14627 has 47 MA's), (Start: 24 @14681 has 1 MA's), (70, 15005), (72, 15035), (105, 15587), (114, 15638), (141, 15833),

Gene: Gretellyn_29 Start: 25984, Stop: 27108, Start Num: 17

Candidate Starts for Gretellyn_29:

(Start: 17 @25984 has 38 MA's), (18, 25990), (Start: 20 @25996 has 1 MA's), (28, 26041), (35, 26065), (43, 26152), (51, 26209), (56, 26254), (60, 26296), (64, 26320), (71, 26383), (85, 26422), (95, 26497), (97, 26527), (107, 26608), (112, 26644), (133, 26797), (143, 26878), (145, 26899), (155, 26977), (166, 27058),

Gene: Gumpizza_19 Start: 14674, Stop: 16068, Start Num: 24

Candidate Starts for Gumpizza_19:

(Start: 15 @14620 has 47 MA's), (Start: 24 @14674 has 1 MA's), (70, 14998), (72, 15028), (105, 15580), (114, 15631), (141, 15826),

Gene: Halsey_19 Start: 14619, Stop: 16067, Start Num: 15

Candidate Starts for Halsey_19:

(Start: 15 @14619 has 47 MA's), (Start: 24 @14673 has 1 MA's), (72, 15027), (73, 15033), (105, 15579), (114, 15630), (141, 15825),

Gene: Iter_19 Start: 14928, Stop: 16049, Start Num: 15

Candidate Starts for Iter_19:

(Start: 15 @14928 has 47 MA's), (38, 15051), (40, 15072), (65, 15276), (73, 15342), (139, 15798), (146, 15858),

Gene: Jalebi_28 Start: 26151, Stop: 27275, Start Num: 17

Candidate Starts for Jalebi_28:

(Start: 17 @26151 has 38 MA's), (18, 26157), (Start: 20 @26163 has 1 MA's), (28, 26208), (35, 26232), (43, 26319), (51, 26376), (56, 26421), (60, 26463), (85, 26589), (95, 26664), (97, 26694), (107, 26775), (112, 26811), (133, 26964), (143, 27045), (145, 27066), (155, 27144), (166, 27225),

Gene: Jamemuya19_27 Start: 23220, Stop: 24344, Start Num: 17

Candidate Starts for Jamemuya19_27:

(Start: 17 @23220 has 38 MA's), (18, 23226), (Start: 20 @23232 has 1 MA's), (28, 23277), (35, 23301), (43, 23388), (51, 23445), (56, 23490), (60, 23532), (64, 23556), (85, 23658), (95, 23733), (97, 23763), (107, 23844), (112, 23880), (133, 24033), (138, 24066), (155, 24213), (166, 24294),

Gene: Janeemi_20 Start: 16175, Stop: 17617, Start Num: 15

Candidate Starts for Janeemi_20:

(Start: 15 @16175 has 47 MA's), (25, 16235), (38, 16298), (66, 16529), (73, 16589), (139, 17366), (151, 17471),

Gene: JanetJ_20 Start: 15852, Stop: 16901, Start Num: 16

Candidate Starts for JanetJ_20:

(Start: 16 @15852 has 5 MA's), (Start: 20 @15870 has 1 MA's), (32, 15930), (57, 16122), (66, 16188), (123, 16518), (129, 16554), (164, 16875), (165, 16881),

Gene: JasmineDragon_18 Start: 13074, Stop: 14306, Start Num: 16

Candidate Starts for JasmineDragon_18:

(Start: 16 @13074 has 5 MA's), (43, 13269), (47, 13293), (85, 13644), (100, 13800), (114, 13890), (131, 13989), (149, 14145), (158, 14226),

Gene: Joemato_19 Start: 14919, Stop: 16040, Start Num: 15

Candidate Starts for Joemato_19:

(Start: 15 @14919 has 47 MA's), (25, 14979), (38, 15042), (40, 15063), (67, 15276), (72, 15327), (73, 15333), (106, 15555), (137, 15771), (139, 15789), (146, 15849),

Gene: JohnDoe_19 Start: 14914, Stop: 16035, Start Num: 15

Candidate Starts for JohnDoe_19:

(Start: 15 @14914 has 47 MA's), (25, 14974), (38, 15037), (40, 15058), (67, 15271), (72, 15322), (73, 15328), (106, 15550), (139, 15784), (146, 15844),

Gene: Jstan_20 Start: 14901, Stop: 16022, Start Num: 15

Candidate Starts for Jstan_20:

(Start: 15 @14901 has 47 MA's), (25, 14961), (27, 14967), (38, 15024), (40, 15045), (72, 15309), (139, 15771),

Gene: JuneStar_19 Start: 15024, Stop: 16145, Start Num: 15

Candidate Starts for JuneStar_19:

(Start: 15 @15024 has 47 MA's), (40, 15168), (51, 15258), (73, 15438), (139, 15894), (166, 16110),

Gene: Kalimba_19 Start: 14528, Stop: 15976, Start Num: 15

Candidate Starts for Kalimba_19:

(Start: 15 @14528 has 47 MA's), (Start: 24 @14582 has 1 MA's), (70, 14906), (72, 14936), (105, 15488), (141, 15734),

Gene: Kaylissa_19 Start: 14920, Stop: 16041, Start Num: 15

Candidate Starts for Kaylissa_19:

(Start: 15 @14920 has 47 MA's), (25, 14980), (38, 15043), (40, 15064), (67, 15277), (72, 15328), (73, 15334), (106, 15556), (139, 15790), (146, 15850),

Gene: LadyAstra_19 Start: 13076, Stop: 14311, Start Num: 16

Candidate Starts for LadyAstra_19:

(4, 12755), (Start: 16 @13076 has 5 MA's), (43, 13271), (47, 13295), (85, 13646), (100, 13802), (114, 13895), (131, 13994), (149, 14150), (158, 14231),

Gene: Lambo_29 Start: 25656, Stop: 26780, Start Num: 17

Candidate Starts for Lambo_29:

(Start: 17 @25656 has 38 MA's), (18, 25662), (28, 25713), (35, 25737), (43, 25824), (51, 25881), (56, 25926), (60, 25968), (64, 25992), (71, 26055), (85, 26094), (95, 26169), (97, 26199), (107, 26280), (112, 26316), (133, 26469), (155, 26649),

Gene: LavAbarElk_27 Start: 24090, Stop: 25214, Start Num: 17

Candidate Starts for LavAbarElk_27:

(Start: 17 @24090 has 38 MA's), (18, 24096), (Start: 20 @24102 has 1 MA's), (28, 24147), (35, 24171), (43, 24258), (51, 24315), (56, 24360), (60, 24402), (85, 24528), (95, 24603), (97, 24633), (107, 24714), (112, 24750), (133, 24903), (143, 24984), (145, 25005), (155, 25083), (166, 25164),

Gene: Lego_19 Start: 14919, Stop: 16040, Start Num: 15

Candidate Starts for Lego_19:

(Start: 15 @14919 has 47 MA's), (25, 14979), (38, 15042), (40, 15063), (67, 15276), (72, 15327), (73, 15333), (106, 15555), (137, 15771), (139, 15789), (146, 15849),

Gene: Leopard_38 Start: 28522, Stop: 29766, Start Num: 10

Candidate Starts for Leopard_38:

(7, 28474), (9, 28510), (Start: 10 @28522 has 3 MA's), (28, 28621), (34, 28639), (46, 28756), (54, 28825), (58, 28858), (59, 28867), (62, 28894), (67, 28918), (69, 28927), (85, 29002), (96, 29098), (99, 29134), (107, 29188), (110, 29209), (113, 29227), (114, 29233), (115, 29236), (117, 29248), (134, 29380), (135, 29383), (153, 29545), (155, 29557), (157, 29566), (171, 29701), (172, 29743),

Gene: Liebe_18 Start: 13443, Stop: 14564, Start Num: 15

Candidate Starts for Liebe_18:

(Start: 15 @13443 has 47 MA's), (29, 13512), (37, 13554), (38, 13566), (40, 13587), (72, 13851), (91, 13935), (117, 14142), (121, 14154), (139, 14313), (146, 14373), (152, 14430), (157, 14457), (158, 14466),

Gene: Lila22_28 Start: 25623, Stop: 26735, Start Num: 20

Candidate Starts for Lila22_28:

(Start: 17 @25611 has 38 MA's), (18, 25617), (Start: 20 @25623 has 1 MA's), (28, 25668), (35, 25692), (43, 25779), (51, 25836), (56, 25881), (60, 25923), (64, 25947), (71, 26010), (85, 26049), (95, 26124), (97, 26154), (107, 26235), (112, 26271), (133, 26424), (143, 26505), (145, 26526), (155, 26604),

Gene: LilyPad_25 Start: 20787, Stop: 21920, Start Num: 17

Candidate Starts for LilyPad_25:

(Start: 17 @20787 has 38 MA's), (25, 20838), (28, 20847), (34, 20865), (38, 20904), (40, 20925), (48, 21000), (55, 21060), (64, 21129), (72, 21198), (120, 21486), (124, 21504), (128, 21534), (130, 21558),

(133, 21606), (149, 21720), (155, 21786), (156, 21792), (161, 21825), (163, 21831), (165, 21864), (168, 21879),

Gene: LittleFella_26 Start: 22663, Stop: 23796, Start Num: 17

Candidate Starts for LittleFella_26:

(Start: 17 @22663 has 38 MA's), (27, 22720), (28, 22723), (40, 22801), (45, 22843), (49, 22879), (60, 22981), (64, 23005), (66, 23020), (72, 23074), (73, 23080), (93, 23167), (102, 23251), (117, 23353), (120, 23362), (124, 23380), (125, 23386), (130, 23434), (133, 23482), (143, 23563), (147, 23590), (149, 23596), (155, 23662), (156, 23668), (161, 23701), (163, 23707), (165, 23740), (166, 23746), (168, 23755),

Gene: Lizalica_19 Start: 14904, Stop: 16025, Start Num: 15

Candidate Starts for Lizalica_19:

(Start: 15 @14904 has 47 MA's), (25, 14964), (38, 15027), (40, 15048), (72, 15312), (73, 15318), (137, 15756), (139, 15774), (146, 15834),

Gene: London_19 Start: 14901, Stop: 16022, Start Num: 15

Candidate Starts for London_19:

(Start: 15 @14901 has 47 MA's), (25, 14961), (27, 14967), (38, 15024), (40, 15045), (72, 15309), (139, 15771),

Gene: LuckyBarnes_26 Start: 21950, Stop: 23038, Start Num: 15

Candidate Starts for LuckyBarnes_26:

(Start: 15 @21950 has 47 MA's), (31, 22034), (35, 22049), (60, 22274), (81, 22403), (84, 22415), (97, 22487), (99, 22514), (114, 22607), (123, 22646), (126, 22673), (128, 22679), (131, 22706), (142, 22805), (148, 22859), (150, 22883), (160, 22964),

Gene: LuckyLeo_28 Start: 24963, Stop: 26087, Start Num: 17

Candidate Starts for LuckyLeo_28:

(Start: 17 @24963 has 38 MA's), (18, 24969), (28, 25020), (35, 25044), (43, 25131), (51, 25188), (56, 25233), (60, 25275), (63, 25296), (64, 25299), (71, 25362), (85, 25401), (89, 25404), (95, 25476), (97, 25506), (107, 25587), (112, 25623), (133, 25776), (155, 25956),

Gene: MaGuCo_18 Start: 13377, Stop: 14498, Start Num: 15

Candidate Starts for MaGuCo_18:

(Start: 15 @13377 has 47 MA's), (38, 13500), (40, 13521), (73, 13791), (91, 13869), (117, 14076), (121, 14088), (137, 14229), (139, 14247), (146, 14307), (152, 14364), (157, 14391), (158, 14400),

Gene: Madi_24 Start: 20204, Stop: 21337, Start Num: 17

Candidate Starts for Madi_24:

(Start: 17 @20204 has 38 MA's), (38, 20321), (40, 20342), (42, 20354), (43, 20375), (45, 20384), (48, 20417), (64, 20546), (72, 20615), (98, 20765), (107, 20834), (111, 20858), (120, 20903), (124, 20921), (126, 20945), (130, 20975), (147, 21131), (149, 21137), (155, 21203), (156, 21209), (161, 21242), (165, 21281),

Gene: Maureen_18 Start: 13443, Stop: 14564, Start Num: 15

Candidate Starts for Maureen_18:

(Start: 15 @13443 has 47 MA's), (29, 13512), (37, 13554), (38, 13566), (40, 13587), (72, 13851), (91, 13935), (117, 14142), (121, 14154), (139, 14313), (146, 14373), (152, 14430), (157, 14457), (158, 14466),

Gene: Mima20_29 Start: 25340, Stop: 26464, Start Num: 17

Candidate Starts for Mima20_29:

(Start: 17 @25340 has 38 MA's), (18, 25346), (Start: 20 @25352 has 1 MA's), (28, 25397), (35, 25421), (43, 25508), (51, 25565), (56, 25610), (60, 25652), (64, 25676), (71, 25739), (85, 25778), (95, 25853), (97, 25883), (107, 25964), (112, 26000), (133, 26153), (143, 26234), (145, 26255), (155, 26333), (166, 26414),

Gene: MiniMommy_18 Start: 13075, Stop: 14307, Start Num: 16

Candidate Starts for MiniMommy_18:

(Start: 16 @13075 has 5 MA's), (43, 13270), (47, 13294), (85, 13645), (100, 13801), (114, 13891), (131, 13990), (149, 14146), (158, 14227),

Gene: MoiGyank_31 Start: 26021, Stop: 27145, Start Num: 17

Candidate Starts for MoiGyank_31:

(Start: 17 @26021 has 38 MA's), (18, 26027), (Start: 20 @26033 has 1 MA's), (28, 26078), (35, 26102), (43, 26189), (51, 26246), (56, 26291), (60, 26333), (85, 26459), (95, 26534), (97, 26564), (107, 26645), (112, 26681), (133, 26834), (143, 26915), (145, 26936), (155, 27014), (166, 27095),

Gene: MontyDev_29 Start: 23090, Stop: 24277, Start Num: 13

Candidate Starts for MontyDev_29:

(5, 22985), (6, 22991), (Start: 13 @23090 has 12 MA's), (19, 23117), (Start: 20 @23120 has 1 MA's), (30, 23165), (33, 23177), (35, 23186), (64, 23462), (67, 23480), (79, 23558), (82, 23567), (85, 23582), (112, 23804), (115, 23816), (133, 23957), (134, 23960), (146, 24065), (151, 24110), (155, 24140), (159, 24164), (160, 24176), (161, 24179), (167, 24227), (170, 24266),

Gene: Moss_19 Start: 14619, Stop: 16067, Start Num: 15

Candidate Starts for Moss_19:

(Start: 15 @14619 has 47 MA's), (Start: 24 @14673 has 1 MA's), (72, 15027), (73, 15033), (105, 15579), (114, 15630), (141, 15825),

Gene: MrMiyagi_23 Start: 19394, Stop: 20566, Start Num: 13

Candidate Starts for MrMiyagi_23:

(11, 19382), (Start: 13 @19394 has 12 MA's), (23, 19448), (26, 19463), (34, 19484), (51, 19655), (54, 19691), (67, 19784), (73, 19841), (85, 19868), (90, 19901), (94, 19937), (97, 19973), (110, 20075), (112, 20090), (134, 20246), (155, 20423), (157, 20432), (158, 20441), (161, 20462), (162, 20465), (167, 20510),

Gene: Mudpuppy_19 Start: 14918, Stop: 16039, Start Num: 15

Candidate Starts for Mudpuppy_19:

(Start: 15 @14918 has 47 MA's), (25, 14978), (38, 15041), (40, 15062), (67, 15275), (72, 15326), (73, 15332), (106, 15554), (137, 15770), (139, 15788), (146, 15848),

Gene: Mysterium_19 Start: 14620, Stop: 16068, Start Num: 15

Candidate Starts for Mysterium_19:

(Start: 15 @14620 has 47 MA's), (Start: 24 @14674 has 1 MA's), (70, 14998), (72, 15028), (105, 15580), (114, 15631), (141, 15826),

Gene: Nilo_30 Start: 23446, Stop: 24633, Start Num: 13

Candidate Starts for Nilo_30:

(5, 23341), (6, 23347), (8, 23386), (Start: 13 @23446 has 12 MA's), (19, 23473), (Start: 20 @23476 has 1 MA's), (30, 23521), (33, 23533), (35, 23542), (51, 23707), (64, 23818), (67, 23836), (79, 23914), (82, 23923), (85, 23938), (112, 24160), (115, 24172), (133, 24313), (134, 24316), (146, 24421), (151, 24466), (155, 24496), (159, 24520), (160, 24532), (161, 24535), (167, 24583), (170, 24622),

Gene: Niobe_19 Start: 14901, Stop: 16022, Start Num: 15

Candidate Starts for Niobe_19:

(Start: 15 @14901 has 47 MA's), (25, 14961), (27, 14967), (38, 15024), (40, 15045), (72, 15309), (139, 15771),

Gene: Nitro_19 Start: 14929, Stop: 16050, Start Num: 15

Candidate Starts for Nitro_19:

(Start: 15 @14929 has 47 MA's), (25, 14989), (38, 15052), (40, 15073), (73, 15343), (92, 15430), (139, 15799),

Gene: NoSwimming_21 Start: 16995, Stop: 18044, Start Num: 16

Candidate Starts for NoSwimming_21:

(2, 16623), (12, 16965), (Start: 16 @16995 has 5 MA's), (Start: 20 @17013 has 1 MA's), (44, 17169), (50, 17196), (55, 17244), (57, 17265), (66, 17331), (80, 17412), (116, 17637), (123, 17661), (127, 17691), (129, 17697), (132, 17739), (144, 17856), (157, 17958), (164, 18018), (165, 18024),

Gene: NorManre_30 Start: 25228, Stop: 26352, Start Num: 17

Candidate Starts for NorManre_30:

(Start: 17 @25228 has 38 MA's), (18, 25234), (Start: 20 @25240 has 1 MA's), (28, 25285), (35, 25309), (43, 25396), (51, 25453), (56, 25498), (60, 25540), (64, 25564), (71, 25627), (85, 25666), (95, 25741), (97, 25771), (107, 25852), (112, 25888), (133, 26041), (143, 26122), (145, 26143), (155, 26221), (166, 26302),

Gene: NovaSharks_28 Start: 23220, Stop: 24344, Start Num: 17

Candidate Starts for NovaSharks_28:

(Start: 17 @23220 has 38 MA's), (18, 23226), (Start: 20 @23232 has 1 MA's), (28, 23277), (35, 23301), (43, 23388), (51, 23445), (56, 23490), (60, 23532), (64, 23556), (85, 23658), (95, 23733), (97, 23763), (107, 23844), (112, 23880), (133, 24033), (138, 24066), (155, 24213), (166, 24294),

Gene: Onyinye_39 Start: 28401, Stop: 29645, Start Num: 10

Candidate Starts for Onyinye_39:

(7, 28353), (9, 28389), (Start: 10 @28401 has 3 MA's), (28, 28500), (34, 28518), (46, 28635), (54, 28704), (58, 28737), (59, 28746), (62, 28773), (69, 28806), (85, 28881), (96, 28977), (99, 29013), (107, 29067), (110, 29088), (113, 29106), (114, 29112), (115, 29115), (117, 29127), (134, 29259), (135, 29262), (153, 29424), (155, 29436), (157, 29445), (171, 29580), (172, 29622),

Gene: OtterstedtS21_29 Start: 25306, Stop: 26430, Start Num: 17

Candidate Starts for OtterstedtS21_29:

(Start: 17 @25306 has 38 MA's), (18, 25312), (Start: 20 @25318 has 1 MA's), (28, 25363), (35, 25387), (43, 25474), (51, 25531), (56, 25576), (60, 25618), (85, 25744), (95, 25819), (97, 25849), (107, 25930), (112, 25966), (133, 26119), (143, 26200), (145, 26221), (155, 26299), (166, 26380),

Gene: Papyrus_29 Start: 23111, Stop: 24298, Start Num: 13

Candidate Starts for Papyrus_29:

(5, 23006), (6, 23012), (Start: 13 @23111 has 12 MA's), (19, 23138), (Start: 20 @23141 has 1 MA's), (30, 23186), (33, 23198), (35, 23207), (64, 23483), (67, 23501), (79, 23579), (82, 23588), (85, 23603), (89, 23606), (112, 23825), (115, 23837), (133, 23978), (134, 23981), (146, 24086), (151, 24131), (155, 24161), (159, 24185), (160, 24197), (161, 24200), (167, 24248), (170, 24287),

Gene: ParvusTarda_29 Start: 24788, Stop: 25912, Start Num: 17

Candidate Starts for ParvusTarda_29:

(Start: 17 @24788 has 38 MA's), (18, 24794), (Start: 20 @24800 has 1 MA's), (28, 24845), (35, 24869), (43, 24956), (51, 25013), (56, 25058), (60, 25100), (64, 25124), (71, 25187), (85, 25226), (95, 25301), (97, 25331), (107, 25412), (112, 25448), (118, 25475), (133, 25601), (155, 25781),

Gene: Patos_30 Start: 25228, Stop: 26352, Start Num: 17

Candidate Starts for Patos_30:

(Start: 17 @25228 has 38 MA's), (18, 25234), (Start: 20 @25240 has 1 MA's), (28, 25285), (35, 25309), (43, 25396), (51, 25453), (56, 25498), (60, 25540), (64, 25564), (71, 25627), (85, 25666), (95, 25741), (97, 25771), (107, 25852), (112, 25888), (133, 26041), (143, 26122), (145, 26143), (155, 26221), (166, 26302),

Gene: Phives_20 Start: 16011, Stop: 17453, Start Num: 15

Candidate Starts for Phives_20:

(Start: 15 @16011 has 47 MA's), (25, 16071), (27, 16077), (38, 16134), (40, 16155), (52, 16248), (66, 16365), (71, 16413), (77, 16533), (88, 16752), (126, 17082), (137, 17184), (139, 17202), (167, 17421),

Gene: Pixelle_19 Start: 14954, Stop: 16396, Start Num: 15

Candidate Starts for Pixelle_19:

(Start: 15 @14954 has 47 MA's), (25, 15014), (27, 15020), (38, 15077), (66, 15308), (71, 15356), (72, 15362), (77, 15476), (88, 15695), (126, 16025), (137, 16127), (139, 16145), (167, 16364),

Gene: Powerpuff_19 Start: 14970, Stop: 16091, Start Num: 15

Candidate Starts for Powerpuff_19:

(Start: 15 @14970 has 47 MA's), (25, 15030), (38, 15093), (40, 15114), (67, 15327), (72, 15378), (73, 15384), (106, 15606), (137, 15822), (139, 15840), (146, 15900),

Gene: Pumpkins_19 Start: 15036, Stop: 16157, Start Num: 15

Candidate Starts for Pumpkins_19:

(1, 14664), (3, 14709), (Start: 15 @15036 has 47 MA's), (39, 15171), (40, 15180), (51, 15270), (72, 15444), (73, 15450), (139, 15906),

Gene: Ranch_29 Start: 24142, Stop: 25266, Start Num: 17

Candidate Starts for Ranch_29:

(Start: 17 @24142 has 38 MA's), (18, 24148), (Start: 20 @24154 has 1 MA's), (28, 24199), (35, 24223), (43, 24310), (51, 24367), (56, 24412), (60, 24454), (64, 24478), (71, 24541), (85, 24580), (95, 24655), (97, 24685), (107, 24766), (112, 24802), (133, 24955), (143, 25036), (145, 25057), (155, 25135), (166, 25216),

Gene: RazorC_27 Start: 23612, Stop: 24736, Start Num: 17

Candidate Starts for RazorC_27:

(Start: 17 @23612 has 38 MA's), (18, 23618), (Start: 20 @23624 has 1 MA's), (28, 23669), (35, 23693), (43, 23780), (51, 23837), (56, 23882), (60, 23924), (64, 23948), (85, 24050), (95, 24125), (97, 24155), (107, 24236), (112, 24272), (133, 24425), (138, 24458), (155, 24605), (166, 24686),

Gene: Riparian_29 Start: 22907, Stop: 24094, Start Num: 13

Candidate Starts for Riparian_29:

(5, 22802), (6, 22808), (Start: 13 @22907 has 12 MA's), (19, 22934), (Start: 20 @22937 has 1 MA's), (30, 22982), (33, 22994), (35, 23003), (51, 23168), (64, 23279), (67, 23297), (79, 23375), (82, 23384), (85, 23399), (112, 23621), (115, 23633), (133, 23774), (134, 23777), (146, 23882), (151, 23927), (155, 23957), (159, 23981), (160, 23993), (161, 23996), (167, 24044), (170, 24083),

Gene: RockScotty_19 Start: 14619, Stop: 16067, Start Num: 15

Candidate Starts for RockScotty_19:

(Start: 15 @14619 has 47 MA's), (Start: 24 @14673 has 1 MA's), (72, 15027), (73, 15033), (105, 15579), (114, 15630), (141, 15825),

Gene: Rope_29 Start: 23093, Stop: 24280, Start Num: 13

Candidate Starts for Rope_29:

(5, 22988), (6, 22994), (Start: 13 @23093 has 12 MA's), (19, 23120), (Start: 20 @23123 has 1 MA's), (30, 23168), (33, 23180), (35, 23189), (51, 23354), (64, 23465), (67, 23483), (79, 23561), (82, 23570), (85, 23585), (89, 23588), (112, 23807), (115, 23819), (133, 23960), (134, 23963), (146, 24068), (151, 24113), (155, 24143), (159, 24167), (160, 24179), (161, 24182), (167, 24230), (170, 24269),

Gene: Rumi_28 Start: 23223, Stop: 24347, Start Num: 17

Candidate Starts for Rumi_28:

(Start: 17 @23223 has 38 MA's), (18, 23229), (Start: 20 @23235 has 1 MA's), (28, 23280), (35, 23304), (43, 23391), (51, 23448), (56, 23493), (60, 23535), (64, 23559), (85, 23661), (95, 23736), (97, 23766), (107, 23847), (112, 23883), (133, 24036), (138, 24069), (155, 24216), (166, 24297),

Gene: Sabourin_19 Start: 14580, Stop: 15974, Start Num: 24

Candidate Starts for Sabourin_19:

(Start: 15 @14526 has 47 MA's), (Start: 24 @14580 has 1 MA's), (70, 14904), (72, 14934), (105, 15486), (141, 15732),

Gene: Sadboi_29 Start: 25984, Stop: 27108, Start Num: 17

Candidate Starts for Sadboi_29:

(Start: 17 @25984 has 38 MA's), (18, 25990), (Start: 20 @25996 has 1 MA's), (28, 26041), (35, 26065), (43, 26152), (51, 26209), (56, 26254), (60, 26296), (64, 26320), (71, 26383), (85, 26422), (95, 26497), (97, 26527), (107, 26608), (112, 26644), (133, 26797), (143, 26878), (145, 26899), (155, 26977), (166, 27058),

Gene: Sampudon_29 Start: 26151, Stop: 27275, Start Num: 17

Candidate Starts for Sampudon_29:

(Start: 17 @26151 has 38 MA's), (18, 26157), (Start: 20 @26163 has 1 MA's), (28, 26208), (35, 26232), (43, 26319), (51, 26376), (56, 26421), (60, 26463), (85, 26589), (95, 26664), (97, 26694), (107, 26775), (112, 26811), (133, 26964), (143, 27045), (145, 27066), (155, 27144), (166, 27225),

Gene: Scotia_21 Start: 16995, Stop: 18044, Start Num: 16

Candidate Starts for Scotia_21:

(2, 16623), (12, 16965), (Start: 16 @16995 has 5 MA's), (Start: 20 @17013 has 1 MA's), (44, 17169), (50, 17196), (55, 17244), (57, 17265), (66, 17331), (80, 17412), (116, 17637), (123, 17661), (127, 17691), (129, 17697), (132, 17739), (144, 17856), (157, 17958), (164, 18018), (165, 18024),

Gene: Send513_29 Start: 23449, Stop: 24636, Start Num: 13

Candidate Starts for Send513_29:

(5, 23344), (6, 23350), (Start: 13 @23449 has 12 MA's), (19, 23476), (Start: 20 @23479 has 1 MA's), (30, 23524), (33, 23536), (35, 23545), (51, 23710), (64, 23821), (67, 23839), (79, 23917), (82, 23926), (85, 23941), (112, 24163), (115, 24175), (133, 24316), (134, 24319), (146, 24424), (151, 24469), (155, 24499), (159, 24523), (160, 24535), (161, 24538), (167, 24586), (170, 24625),

Gene: Shaffner_20 Start: 15023, Stop: 16144, Start Num: 15

Candidate Starts for Shaffner_20:

(Start: 15 @15023 has 47 MA's), (40, 15167), (51, 15257), (73, 15437), (139, 15893), (166, 16109),

Gene: ShakeltOph_19 Start: 13074, Stop: 14306, Start Num: 16

Candidate Starts for ShakeltOph_19:

(Start: 16 @13074 has 5 MA's), (43, 13269), (47, 13293), (85, 13644), (100, 13800), (114, 13890), (131, 13989), (149, 14145), (158, 14226),

Gene: Sienna_24 Start: 20204, Stop: 21337, Start Num: 17

Candidate Starts for Sienna_24:

(Start: 17 @20204 has 38 MA's), (38, 20321), (40, 20342), (42, 20354), (43, 20375), (45, 20384), (48, 20417), (72, 20615), (98, 20765), (111, 20858), (120, 20903), (124, 20921), (128, 20951), (130, 20975), (147, 21131), (149, 21137), (151, 21173), (155, 21203), (156, 21209), (161, 21242), (165, 21281),

Gene: Simpson_21 Start: 14919, Stop: 16040, Start Num: 15

Candidate Starts for Simpson_21:

(Start: 15 @14919 has 47 MA's), (25, 14979), (38, 15042), (40, 15063), (67, 15276), (72, 15327), (73, 15333), (106, 15555), (137, 15771), (139, 15789), (146, 15849),

Gene: Soondubu_18 Start: 15573, Stop: 16658, Start Num: 15

Candidate Starts for Soondubu_18:

(Start: 15 @15573 has 47 MA's), (22, 15627), (59, 15885), (103, 16146), (131, 16323), (133, 16368), (163, 16593), (164, 16620), (169, 16650),

Gene: Sooty_19 Start: 14529, Stop: 15977, Start Num: 15

Candidate Starts for Sooty_19:

(Start: 15 @14529 has 47 MA's), (Start: 24 @14583 has 1 MA's), (70, 14907), (72, 14937), (105, 15489), (141, 15735),

Gene: SpecialK_19 Start: 14580, Stop: 15974, Start Num: 24

Candidate Starts for SpecialK_19:

(Start: 15 @14526 has 47 MA's), (Start: 24 @14580 has 1 MA's), (72, 14934), (73, 14940), (105, 15486), (114, 15537), (141, 15732),

Gene: Stormer_28 Start: 23223, Stop: 24347, Start Num: 17

Candidate Starts for Stormer_28:

(Start: 17 @23223 has 38 MA's), (18, 23229), (Start: 20 @23235 has 1 MA's), (28, 23280), (35, 23304), (43, 23391), (51, 23448), (56, 23493), (60, 23535), (64, 23559), (85, 23661), (95, 23736), (97, 23766), (107, 23847), (112, 23883), (133, 24036), (138, 24069), (155, 24216), (166, 24297),

Gene: Stuu_20 Start: 14673, Stop: 16067, Start Num: 24

Candidate Starts for Stuu_20:

(Start: 15 @14619 has 47 MA's), (Start: 24 @14673 has 1 MA's), (70, 14997), (72, 15027), (105, 15579), (114, 15630), (141, 15825),

Gene: Subaru_20 Start: 14901, Stop: 16022, Start Num: 15

Candidate Starts for Subaru_20:

(Start: 15 @14901 has 47 MA's), (25, 14961), (27, 14967), (38, 15024), (40, 15045), (72, 15309), (139, 15771),

Gene: Suzy_24 Start: 21365, Stop: 22498, Start Num: 17

Candidate Starts for Suzy_24:

(Start: 17 @21365 has 38 MA's), (38, 21482), (40, 21503), (43, 21536), (45, 21545), (64, 21707), (98, 21926), (107, 21995), (117, 22055), (120, 22064), (124, 22082), (126, 22106), (130, 22136), (147, 22292), (149, 22298), (155, 22364), (156, 22370), (161, 22403), (165, 22442), (168, 22457),

Gene: Tallboi_19 Start: 14933, Stop: 16054, Start Num: 15

Candidate Starts for Tallboi_19:

(Start: 15 @14933 has 47 MA's), (25, 14993), (27, 14999), (38, 15056), (40, 15077), (52, 15170), (72, 15341), (73, 15347), (106, 15569), (137, 15785), (139, 15803),

Gene: Tbone_19 Start: 14923, Stop: 16044, Start Num: 15

Candidate Starts for Tbone_19:

(Start: 15 @14923 has 47 MA's), (25, 14983), (38, 15046), (40, 15067), (67, 15280), (72, 15331), (73, 15337), (106, 15559), (137, 15775), (139, 15793), (146, 15853),

Gene: Terapin_24 Start: 20204, Stop: 21337, Start Num: 17

Candidate Starts for Terapin_24:

(Start: 17 @20204 has 38 MA's), (38, 20321), (40, 20342), (42, 20354), (43, 20375), (45, 20384), (48, 20417), (64, 20546), (72, 20615), (98, 20765), (107, 20834), (111, 20858), (120, 20903), (124, 20921), (126, 20945), (130, 20975), (147, 21131), (149, 21137), (155, 21203), (156, 21209), (161, 21242), (165, 21281),

Gene: TforTroy_19 Start: 15054, Stop: 16175, Start Num: 15

Candidate Starts for TforTroy_19:

(Start: 15 @15054 has 47 MA's), (39, 15189), (40, 15198), (51, 15288), (72, 15462), (73, 15468), (83, 15501), (139, 15924),

Gene: Tian_19 Start: 14951, Stop: 16393, Start Num: 15

Candidate Starts for Tian_19:

(Start: 15 @14951 has 47 MA's), (25, 15011), (27, 15017), (38, 15074), (40, 15095), (66, 15305), (71, 15353), (77, 15473), (88, 15692), (126, 16022), (137, 16124), (139, 16142), (167, 16361),

Gene: Tillicus_29 Start: 24557, Stop: 25681, Start Num: 17

Candidate Starts for Tillicus_29:

(Start: 17 @24557 has 38 MA's), (18, 24563), (28, 24614), (35, 24638), (43, 24725), (51, 24782), (56, 24827), (60, 24869), (63, 24890), (64, 24893), (71, 24956), (85, 24995), (89, 24998), (95, 25070), (97, 25100), (107, 25181), (112, 25217), (133, 25370), (145, 25472), (147, 25478), (155, 25550),

Gene: Tuck_20 Start: 16127, Stop: 17569, Start Num: 15

Candidate Starts for Tuck_20:

(Start: 15 @16127 has 47 MA's), (25, 16187), (27, 16193), (38, 16250), (66, 16481), (73, 16541), (86, 16835), (87, 16856), (139, 17318), (148, 17384),

Gene: Turab_19 Start: 14930, Stop: 16051, Start Num: 15

Candidate Starts for Turab_19:

(Start: 15 @14930 has 47 MA's), (25, 14990), (38, 15053), (40, 15074), (72, 15338), (91, 15422), (137, 15782), (139, 15800), (146, 15860),

Gene: Tutumahutu_19 Start: 14970, Stop: 16091, Start Num: 15

Candidate Starts for Tutumahutu_19:

(Start: 15 @14970 has 47 MA's), (25, 15030), (38, 15093), (40, 15114), (67, 15327), (72, 15378), (73, 15384), (106, 15606), (137, 15822), (139, 15840), (146, 15900),

Gene: VroomVroom_18 Start: 13087, Stop: 14322, Start Num: 16

Candidate Starts for VroomVroom_18:

(Start: 16 @13087 has 5 MA's), (43, 13282), (47, 13306), (75, 13528), (85, 13657), (100, 13813), (114, 13906), (131, 14005), (149, 14161), (158, 14242),

Gene: Warda_19 Start: 14915, Stop: 16036, Start Num: 15

Candidate Starts for Warda_19:

(Start: 15 @14915 has 47 MA's), (25, 14975), (38, 15038), (40, 15059), (67, 15272), (72, 15323), (73, 15329), (106, 15551), (137, 15767), (139, 15785), (146, 15845),

Gene: Weiss13_29 Start: 23139, Stop: 24326, Start Num: 13

Candidate Starts for Weiss13_29:

(5, 23034), (6, 23040), (Start: 13 @23139 has 12 MA's), (19, 23166), (Start: 20 @23169 has 1 MA's), (30, 23214), (33, 23226), (35, 23235), (51, 23400), (64, 23511), (67, 23529), (79, 23607), (82, 23616), (85, 23631), (112, 23853), (115, 23865), (133, 24006), (134, 24009), (146, 24114), (151, 24159), (155, 24189), (159, 24213), (160, 24225), (161, 24228), (167, 24276), (170, 24315),

Gene: Wojtek_28 Start: 24861, Stop: 25985, Start Num: 17

Candidate Starts for Wojtek_28:

(Start: 17 @24861 has 38 MA's), (18, 24867), (Start: 20 @24873 has 1 MA's), (28, 24918), (35, 24942), (43, 25029), (51, 25086), (56, 25131), (60, 25173), (64, 25197), (71, 25260), (85, 25299), (95, 25374), (97, 25404), (107, 25485), (112, 25521), (118, 25548), (133, 25674), (155, 25854),

Gene: Xenia2_29 Start: 24947, Stop: 26074, Start Num: 17

Candidate Starts for Xenia2_29:

(Start: 17 @24947 has 38 MA's), (46, 25139), (51, 25172), (54, 25208), (56, 25217), (60, 25259), (73, 25358), (85, 25385), (89, 25388), (104, 25538), (108, 25583), (109, 25586), (112, 25607), (127, 25685), (133, 25760), (151, 25910), (155, 25940), (159, 25964), (165, 26015),

Gene: Yang_19 Start: 15026, Stop: 16147, Start Num: 15

Candidate Starts for Yang_19:

(Start: 15 @15026 has 47 MA's), (40, 15170), (51, 15260), (68, 15386), (137, 15878), (139, 15896), (166, 16112),

Gene: Yelo_29 Start: 23432, Stop: 24619, Start Num: 13

Candidate Starts for Yelo_29:

(5, 23327), (6, 23333), (Start: 13 @23432 has 12 MA's), (19, 23459), (Start: 20 @23462 has 1 MA's), (30, 23507), (33, 23519), (35, 23528), (51, 23693), (64, 23804), (67, 23822), (79, 23900), (82, 23909), (85, 23924), (112, 24146), (115, 24158), (133, 24299), (134, 24302), (146, 24407), (151, 24452), (155, 24482), (159, 24506), (160, 24518), (161, 24521), (167, 24569), (170, 24608),

Gene: YesChef_19 Start: 14970, Stop: 16091, Start Num: 15

Candidate Starts for YesChef_19:

(Start: 15 @14970 has 47 MA's), (25, 15030), (38, 15093), (40, 15114), (67, 15327), (72, 15378), (73, 15384), (106, 15606), (137, 15822), (139, 15840), (146, 15900),

Gene: Yikes_30 Start: 26236, Stop: 27360, Start Num: 17

Candidate Starts for Yikes_30:

(Start: 17 @26236 has 38 MA's), (18, 26242), (Start: 20 @26248 has 1 MA's), (28, 26293), (35, 26317), (43, 26404), (51, 26461), (56, 26506), (60, 26548), (85, 26674), (95, 26749), (97, 26779), (107, 26860), (112, 26896), (133, 27049), (143, 27130), (145, 27151), (155, 27229), (166, 27310),

Gene: Zany_28 Start: 25757, Stop: 26881, Start Num: 17

Candidate Starts for Zany_28:

(Start: 17 @25757 has 38 MA's), (18, 25763), (Start: 20 @25769 has 1 MA's), (28, 25814), (35, 25838), (43, 25925), (51, 25982), (56, 26027), (60, 26069), (64, 26093), (71, 26156), (85, 26195), (95, 26270), (97, 26300), (107, 26381), (112, 26417), (133, 26570), (155, 26750), (166, 26831),

Gene: Zenon_30 Start: 23451, Stop: 24638, Start Num: 13

Candidate Starts for Zenon_30:

(5, 23346), (6, 23352), (Start: 13 @23451 has 12 MA's), (19, 23478), (Start: 20 @23481 has 1 MA's), (30, 23526), (33, 23538), (35, 23547), (51, 23712), (64, 23823), (67, 23841), (79, 23919), (82, 23928),

(85, 23943), (112, 24165), (115, 24177), (133, 24318), (134, 24321), (146, 24426), (151, 24471), (155, 24501), (159, 24525), (160, 24537), (161, 24540), (167, 24588), (170, 24627),