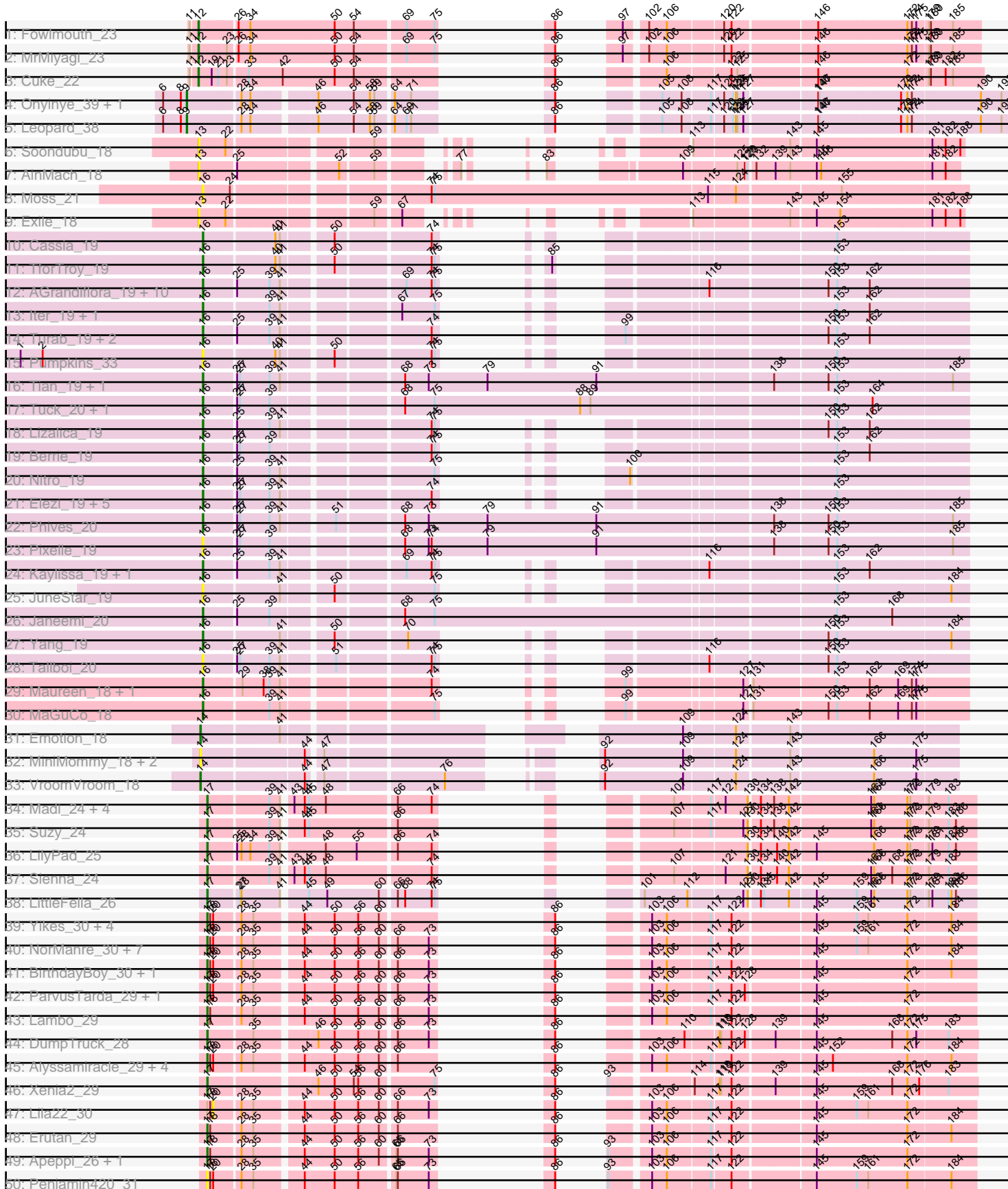
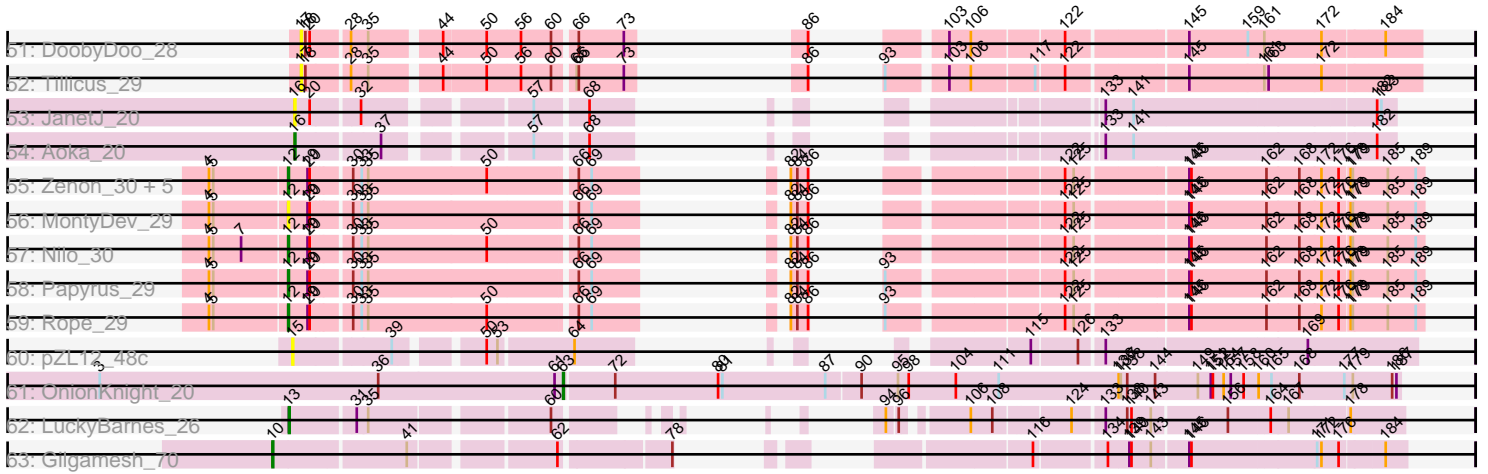


Pham 163459



Pham 163459



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 163459 Report

This analysis was run 04/28/24 on database version 559.

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 163459 has 115 members, 33 are drafts.

Phages represented in each track:

- Track 1 : Fowlmouth_23
- Track 2 : MrMiyagi_23
- Track 3 : Cuke_22
- Track 4 : Onyinye_39, Aikoy_38
- Track 5 : Leopard_38
- Track 6 : Soondubu_18
- Track 7 : AinMach_18
- Track 8 : Moss_21
- Track 9 : Exile_18
- Track 10 : Cassia_19
- Track 11 : TforTroy_19
- Track 12 : AGrandiflora_19, Mudpuppy_20, Lego_19, YesChef_19, Warda_19, Tutumahutu_19, Tbone_19, Powerpuff_19, Cyan_19, Joemato_21, Simpson_21
- Track 13 : lter_19, Ascela_19
- Track 14 : Turab_19, Adumb2043_19, AEgle_19
- Track 15 : Pumpkins_33
- Track 16 : Tian_19, Amyev_19
- Track 17 : Tuck_20, Community_19
- Track 18 : Lizalica_19
- Track 19 : Berrie_19
- Track 20 : Nitro_19
- Track 21 : Elezi_19, Eraser_19, London_19, Jstan_20, Niobe_19, Asa16_19
- Track 22 : Phives_20
- Track 23 : Pixelle_19
- Track 24 : Kaylissa_19, JohnDoe_19
- Track 25 : JuneStar_19
- Track 26 : Janeemi_20
- Track 27 : Yang_19
- Track 28 : Tallboi_20
- Track 29 : Maureen_18, Liebe_18
- Track 30 : MaGuCo_18
- Track 31 : Emotion_18
- Track 32 : MiniMommy_18, JasmineDragon_19, ShakeltOph_19

- Track 33 : VroomVroom_18
- Track 34 : Madi_24, BiteSize_24, Terapin_24, Beyoncage_24, Djokovic_24
- Track 35 : Suzy_24
- Track 36 : LilyPad_25
- Track 37 : Sienna_24
- Track 38 : LittleFella_26
- Track 39 : Yikes_30, Sampudon_29, OtterstedtS21_29, MoiGyank_32, Jalebi_28
- Track 40 : NorManre_30, Sadboi_29, Fulcrum_30, Gibbin_30, Patos_30, GretellLyn_29, GOATification_30, Ranch_29
- Track 41 : BirthdayBoy_30, Zany_28
- Track 42 : ParvusTarda_29, Wojtek_28
- Track 43 : Lambo_29
- Track 44 : DumpTruck_28
- Track 45 : Alyssamiracle_29, Avian_27, Genamy16_29, Rumi_28, NovaSharks_28
- Track 46 : Xenia2_29
- Track 47 : Lila22_30
- Track 48 : Erutan_29
- Track 49 : Apeppi_26, LuckyLeo_28
- Track 50 : Penjamin420_31
- Track 51 : DoobyDoo_28
- Track 52 : Tillicus_29
- Track 53 : JanetJ_20
- Track 54 : Aoka_20
- Track 55 : Zenon_30, Yelo_29, Send513_29, Candle_29, Weiss13_29, Riparian_29
- Track 56 : MontyDev_29
- Track 57 : Nilo_30
- Track 58 : Papyrus_29
- Track 59 : Rope_29
- Track 60 : pZL12_48c
- Track 61 : OnionKnight_20
- Track 62 : LuckyBarnes_26
- Track 63 : 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 17, it was called in 34 of the 82 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alyssamiracle_29, Apeppi_26, Avian_27, Beyoncage_24, BirthdayBoy_30, BiteSize_24, Djokovic_24, DoobyDoo_28, DumpTruck_28, Erutan_29, Fulcrum_30, GOATification_30, Genamy16_29, Gibbin_30, GretellLyn_29, Jalebi_28, Lambo_29, LilyPad_25, LittleFella_26, LuckyLeo_28, Madi_24, MoiGyank_32, NorManre_30, NovaSharks_28, OtterstedtS21_29, ParvusTarda_29, Patos_30, Penjamin420_31, Ranch_29, Rumi_28, Sadboi_29, Sampudon_29, Sienna_24, Suzy_24, Terapin_24, Tillicus_29, Wojtek_28, Xenia2_29, Yikes_30, Zany_28,

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

- Lila22_30,

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

- AEgle_19, AGrandiflora_19, Adumb2043_19, Aikoy_38, AinMach_18, Amyev_19, Aoka_20, Asa16_19, Ascela_19, Berrie_19, Candle_29, Cassia_19, Community_19, Cuke_22, Cyan_19, Elezi_19, Emotion_18, Eraser_19, Exile_18, Fowlmouth_23, Gilgamesh_70, Iter_19, Janeemi_20, JanetJ_20, JasmineDragon_19, Joemato_21, JohnDoe_19, Jstan_20, JuneStar_19, Kaylissa_19, Lego_19, Leopard_38, Liebe_18, Lizalica_19, London_19, LuckyBarnes_26, MaGuCo_18, Maureen_18, MiniMommy_18, MontyDev_29, Moss_21, MrMiyagi_23, Mudpuppy_20, Nilo_30, Niobe_19, Nitro_19, OnionKnight_20, Onyinye_39, Papyrus_29, Phives_20, Pixelle_19, Powerpuff_19, Pumpkins_33, Riparian_29, Rope_29, Send513_29, ShakeltOph_19, Simpson_21, Soondubu_18, Tallboi_20, Tbone_19, TforTroy_19, Tian_19, Tuck_20, Turab_19, Tutumahutu_19, VroomVroom_18, Warda_19, Weiss13_29, Yang_19, Yelo_29, YesChef_19, Zenon_30, pZL12_48c,

Summary by start number:

Start 9:

- Found in 3 of 115 (2.6%) of genes in pham
- Manual Annotations of this start: 3 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aikoy_38 (AE), Leopard_38 (AE), Onyinye_39 (AE),

Start 10:

- Found in 1 of 115 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gilgamesh_70 (singleton),

Start 12:

- Found in 13 of 115 (11.3%) of genes in pham
- Manual Annotations of this start: 11 of 82
- 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 13:

- Found in 4 of 115 (3.5%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AinMach_18 (AZ), Exile_18 (AZ), LuckyBarnes_26 (singleton), Soondubu_18 (AZ),

Start 14:

- Found in 5 of 115 (4.3%) of genes in pham
- Manual Annotations of this start: 2 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Emotion_18 (AZ4), JasmineDragon_19 (AZ4), MiniMommy_18 (AZ4), ShakeltOph_19 (AZ4), VroomVroom_18 (AZ4),

Start 15:

- Found in 1 of 115 (0.9%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: pZL12_48c (singleton),

Start 16:

- Found in 46 of 115 (40.0%) of genes in pham
- Manual Annotations of this start: 29 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AEgle_19 (AZ1), AGrandiflora_19 (AZ1), Adumb2043_19 (AZ1), Amyev_19 (AZ1), Aoka_20 (FO), Asa16_19 (AZ1), Ascela_19 (AZ1), Berrie_19 (AZ1), Cassia_19 (AZ1), Community_19 (AZ1), Cyan_19 (AZ1), Elezi_19 (AZ1), Eraser_19 (AZ1), Iter_19 (AZ1), Janeemi_20 (AZ1), JanetJ_20 (FO), Joemato_21 (AZ1), JohnDoe_19 (AZ1), Jstan_20 (AZ1), JuneStar_19 (AZ1), Kaylissa_19 (AZ1), Lego_19 (AZ1), Liebe_18 (AZ2), Lizalica_19 (AZ1), London_19 (AZ1), MaGuCo_18 (AZ2), Maureen_18 (AZ2), Moss_21 (AZ), Mudpuppy_20 (AZ1), Niobe_19 (AZ1), Nitro_19 (AZ1), Phives_20 (AZ1), Pixelle_19 (AZ1), Powerpuff_19 (AZ1), Pumpkins_33 (AZ1), Simpson_21 (AZ1), Tallboi_20 (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 17:

- Found in 41 of 115 (35.7%) of genes in pham
- Manual Annotations of this start: 34 of 82
- Called 97.6% of time when present
- Phage (with cluster) where this start called: Alyssamiracle_29 (DV), Apeppi_26 (DV), Avian_27 (DV), Beyoncage_24 (DG1), BirthdayBoy_30 (DV), BiteSize_24 (DG1), Djokovic_24 (DG1), DoobyDoo_28 (DV), DumpTruck_28 (DV), Erutan_29 (DV), Fulcrum_30 (DV), GOATification_30 (DV), Genamy16_29 (DV), Gibbin_30 (DV), GretelLyn_29 (DV), Jalebi_28 (DV), Lambo_29 (DV), LilyPad_25 (DG1), LittleFella_26 (DG2), LuckyLeo_28 (DV), Madi_24 (DG1), MoiGyank_32 (DV), NorManre_30 (DV), NovaSharks_28 (DV), OtterstedtS21_29 (DV), ParvusTarda_29 (DV), Patos_30 (DV), Penjamin420_31 (DV), Ranch_29 (DV), Rumi_28 (DV), Sadboi_29 (DV), Sampudon_29 (DV), Sienna_24 (DG1), 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 36 of 115 (31.3%) of genes in pham
- No Manual Annotations of this start.
- Called 2.8% of time when present
- Phage (with cluster) where this start called: Lila22_30 (DV),

Start 63:

- Found in 1 of 115 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: OnionKnight_20 (singleton),

Summary by clusters:

There are 12 clusters represented in this pham: singleton, AE, AC, DG2, R, DV, AZ1, DG1, AZ, AZ4, AZ2, FO,

Info for manual annotations of cluster AC:

- Start number 12 was manually annotated 3 times for cluster AC.

Info for manual annotations of cluster AE:

- Start number 9 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster AZ1:

- Start number 16 was manually annotated 25 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 16 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster AZ4:

- Start number 14 was manually annotated 2 times for cluster AZ4.

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 25 times for cluster DV.

Info for manual annotations of cluster FO:

- Start number 16 was manually annotated 1 time for cluster FO.

Info for manual annotations of cluster R:

- Start number 12 was manually annotated 8 times for cluster R.

Gene Information:

Gene: AEgle_19 Start: 14931, Stop: 16052, Start Num: 16

Candidate Starts for AEgle_19:

(Start: 16 @14931 has 29 MA's), (25, 14991), (39, 15054), (41, 15075), (74, 15339), (99, 15423), (150, 15783), (153, 15801), (162, 15861),

Gene: AGrandiflora_19 Start: 14916, Stop: 16037, Start Num: 16

Candidate Starts for AGrandiflora_19:

(Start: 16 @14916 has 29 MA's), (25, 14976), (39, 15039), (41, 15060), (69, 15273), (74, 15324), (75, 15330), (116, 15552), (150, 15768), (153, 15786), (162, 15846),

Gene: Adumb2043_19 Start: 14930, Stop: 16051, Start Num: 16

Candidate Starts for Adumb2043_19:

(Start: 16 @14930 has 29 MA's), (25, 14990), (39, 15053), (41, 15074), (74, 15338), (99, 15422), (150, 15782), (153, 15800), (162, 15860),

Gene: Aikoy_38 Start: 28234, Stop: 29478, Start Num: 9

Candidate Starts for Aikoy_38:

(6, 28186), (8, 28222), (Start: 9 @28234 has 3 MA's), (28, 28333), (34, 28351), (46, 28468), (54, 28537), (58, 28570), (59, 28579), (64, 28606), (71, 28639), (86, 28714), (105, 28810), (108, 28846), (117, 28900), (120, 28921), (123, 28939), (124, 28945), (125, 28948), (127, 28960), (146, 29092), (147, 29095), (170, 29257), (172, 29269), (174, 29278), (190, 29413), (191, 29455),

Gene: AinMach_18 Start: 14089, Stop: 15219, Start Num: 13

Candidate Starts for AinMach_18:

(Start: 13 @14089 has 1 MA's), (25, 14158), (52, 14341), (59, 14404), (77, 14509), (83, 14524), (109, 14692), (125, 14788), (128, 14803), (129, 14806), (132, 14818), (139, 14854), (143, 14884), (145, 14938), (148, 14947), (181, 15163), (182, 15190),

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

Candidate Starts for Alyssamiracle_29:

(Start: 17 @23630 has 34 MA's), (18, 23636), (20, 23642), (28, 23687), (35, 23711), (44, 23798), (50, 23855), (56, 23900), (60, 23942), (66, 23966), (86, 24068), (103, 24143), (106, 24173), (117, 24254), (122, 24290), (145, 24443), (152, 24476), (172, 24623), (184, 24704),

Gene: Amyev_19 Start: 14951, Stop: 16393, Start Num: 16

Candidate Starts for Amyev_19:

(Start: 16 @14951 has 29 MA's), (25, 15011), (27, 15017), (39, 15074), (41, 15095), (68, 15305), (73, 15353), (79, 15473), (91, 15692), (138, 16022), (150, 16124), (153, 16142), (185, 16361),

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

Candidate Starts for Aoka_20:

(Start: 16 @16034 has 29 MA's), (37, 16139), (57, 16304), (68, 16370), (133, 16700), (141, 16736), (182, 17057),

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

Candidate Starts for Apeppi_26:

(Start: 17 @24963 has 34 MA's), (18, 24969), (28, 25020), (35, 25044), (44, 25131), (50, 25188), (56, 25233), (60, 25275), (65, 25296), (66, 25299), (73, 25362), (86, 25401), (93, 25404), (103, 25476), (106, 25506), (117, 25587), (122, 25623), (145, 25776), (172, 25956),

Gene: Asa16_19 Start: 14900, Stop: 16021, Start Num: 16

Candidate Starts for Asa16_19:

(Start: 16 @14900 has 29 MA's), (25, 14960), (27, 14966), (39, 15023), (41, 15044), (74, 15308), (153, 15770),

Gene: Ascela_19 Start: 14928, Stop: 16049, Start Num: 16

Candidate Starts for Ascela_19:

(Start: 16 @14928 has 29 MA's), (39, 15051), (41, 15072), (67, 15276), (75, 15342), (153, 15798), (162, 15858),

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

Candidate Starts for Avian_27:

(Start: 17 @23612 has 34 MA's), (18, 23618), (20, 23624), (28, 23669), (35, 23693), (44, 23780), (50, 23837), (56, 23882), (60, 23924), (66, 23948), (86, 24050), (103, 24125), (106, 24155), (117, 24236), (122, 24272), (145, 24425), (152, 24458), (172, 24605), (184, 24686),

Gene: Berrie_19 Start: 15065, Stop: 16186, Start Num: 16

Candidate Starts for Berrie_19:

(Start: 16 @15065 has 29 MA's), (25, 15125), (27, 15131), (39, 15188), (74, 15473), (75, 15479), (153, 15935), (162, 15995),

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

Candidate Starts for Beyoncage_24:

(Start: 17 @20204 has 34 MA's), (39, 20321), (41, 20342), (43, 20354), (44, 20375), (45, 20384), (48, 20417), (66, 20546), (74, 20615), (107, 20765), (117, 20834), (121, 20858), (130, 20903), (134, 20921), (138, 20945), (142, 20975), (163, 21131), (166, 21137), (172, 21203), (173, 21209), (179, 21242), (183, 21281),

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

Candidate Starts for BirthdayBoy_30:

(Start: 17 @25673 has 34 MA's), (18, 25679), (20, 25685), (28, 25730), (35, 25754), (44, 25841), (50, 25898), (56, 25943), (60, 25985), (66, 26009), (73, 26072), (86, 26111), (103, 26186), (106, 26216), (117, 26297), (122, 26333), (145, 26486), (172, 26666), (184, 26747),

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

Candidate Starts for BiteSize_24:

(Start: 17 @20204 has 34 MA's), (39, 20321), (41, 20342), (43, 20354), (44, 20375), (45, 20384), (48, 20417), (66, 20546), (74, 20615), (107, 20765), (117, 20834), (121, 20858), (130, 20903), (134, 20921), (138, 20945), (142, 20975), (163, 21131), (166, 21137), (172, 21203), (173, 21209), (179, 21242), (183, 21281),

Gene: Candle_29 Start: 23449, Stop: 24636, Start Num: 12

Candidate Starts for Candle_29:

(4, 23344), (5, 23350), (Start: 12 @23449 has 11 MA's), (19, 23476), (20, 23479), (30, 23524), (33, 23536), (35, 23545), (50, 23710), (66, 23821), (69, 23839), (82, 23917), (84, 23926), (86, 23941), (122, 24163), (125, 24175), (145, 24316), (146, 24319), (162, 24424), (168, 24469), (172, 24499), (176, 24523), (178, 24535), (179, 24538), (185, 24586), (189, 24625),

Gene: Cassia_19 Start: 15026, Stop: 16147, Start Num: 16

Candidate Starts for Cassia_19:

(Start: 16 @15026 has 29 MA's), (40, 15161), (41, 15170), (50, 15260), (74, 15434), (153, 15896),

Gene: Community_19 Start: 16147, Stop: 17589, Start Num: 16

Candidate Starts for Community_19:

(Start: 16 @16147 has 29 MA's), (25, 16207), (27, 16213), (39, 16270), (68, 16501), (75, 16561), (88, 16855), (89, 16876), (153, 17338), (164, 17404),

Gene: Cuke_22 Start: 19244, Stop: 20422, Start Num: 12

Candidate Starts for Cuke_22:

(11, 19232), (Start: 12 @19244 has 11 MA's), (19, 19271), (21, 19283), (23, 19298), (33, 19331), (42, 19400), (50, 19505), (54, 19541), (86, 19718), (106, 19823), (122, 19940), (125, 19952), (146, 20096), (172, 20273), (179, 20312), (180, 20315), (182, 20345), (185, 20360),

Gene: Cyan_19 Start: 14919, Stop: 16040, Start Num: 16

Candidate Starts for Cyan_19:

(Start: 16 @14919 has 29 MA's), (25, 14979), (39, 15042), (41, 15063), (69, 15276), (74, 15327), (75, 15333), (116, 15555), (150, 15771), (153, 15789), (162, 15849),

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

Candidate Starts for Djokovic_24:

(Start: 17 @20204 has 34 MA's), (39, 20321), (41, 20342), (43, 20354), (44, 20375), (45, 20384), (48, 20417), (66, 20546), (74, 20615), (107, 20765), (117, 20834), (121, 20858), (130, 20903), (134, 20921), (138, 20945), (142, 20975), (163, 21131), (166, 21137), (172, 21203), (173, 21209), (179,

21242), (183, 21281),

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

Candidate Starts for DoobyDoo_28:

(Start: 17 @24595 has 34 MA's), (18, 24601), (20, 24607), (28, 24652), (35, 24676), (44, 24763), (50, 24820), (56, 24865), (60, 24907), (66, 24931), (73, 24994), (86, 25033), (103, 25108), (106, 25138), (122, 25255), (145, 25408), (159, 25489), (161, 25510), (172, 25588), (184, 25669),

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

Candidate Starts for DumpTruck_28:

(Start: 17 @24905 has 34 MA's), (35, 24986), (46, 25097), (50, 25130), (56, 25175), (60, 25217), (66, 25241), (73, 25304), (86, 25343), (110, 25481), (118, 25541), (119, 25544), (122, 25565), (128, 25592), (139, 25643), (145, 25718), (168, 25868), (172, 25898), (175, 25916), (183, 25973),

Gene: Elezi_19 Start: 14901, Stop: 16022, Start Num: 16

Candidate Starts for Elezi_19:

(Start: 16 @14901 has 29 MA's), (25, 14961), (27, 14967), (39, 15024), (41, 15045), (74, 15309), (153, 15771),

Gene: Emotion_18 Start: 13147, Stop: 14427, Start Num: 14

Candidate Starts for Emotion_18:

(Start: 14 @13147 has 2 MA's), (41, 13297), (109, 13915), (124, 14008), (143, 14107),

Gene: Eraser_19 Start: 14901, Stop: 16022, Start Num: 16

Candidate Starts for Eraser_19:

(Start: 16 @14901 has 29 MA's), (25, 14961), (27, 14967), (39, 15024), (41, 15045), (74, 15309), (153, 15771),

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

Candidate Starts for Erutan_29:

(Start: 17 @25117 has 34 MA's), (18, 25123), (28, 25174), (35, 25198), (44, 25285), (50, 25342), (56, 25387), (60, 25429), (66, 25453), (86, 25555), (103, 25630), (106, 25660), (117, 25741), (122, 25777), (145, 25930), (172, 26110), (184, 26191),

Gene: Exile_18 Start: 15565, Stop: 16650, Start Num: 13

Candidate Starts for Exile_18:

(Start: 13 @15565 has 1 MA's), (22, 15619), (59, 15877), (67, 15919), (113, 16138), (143, 16315), (145, 16360), (154, 16408), (181, 16585), (182, 16612), (188, 16642),

Gene: Fowlmouth_23 Start: 19374, Stop: 20546, Start Num: 12

Candidate Starts for Fowlmouth_23:

(11, 19362), (Start: 12 @19374 has 11 MA's), (26, 19443), (34, 19464), (50, 19635), (54, 19671), (69, 19764), (75, 19821), (86, 19848), (97, 19881), (102, 19917), (106, 19953), (120, 20055), (122, 20070), (146, 20226), (172, 20403), (174, 20412), (175, 20421), (179, 20442), (180, 20445), (185, 20490),

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

Candidate Starts for Fulcrum_30:

(Start: 17 @25641 has 34 MA's), (18, 25647), (20, 25653), (28, 25698), (35, 25722), (44, 25809), (50, 25866), (56, 25911), (60, 25953), (66, 25977), (73, 26040), (86, 26079), (103, 26154), (106, 26184), (117, 26265), (122, 26301), (145, 26454), (159, 26535), (161, 26556), (172, 26634), (184, 26715),

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

Candidate Starts for GOATification_30:

(Start: 17 @25641 has 34 MA's), (18, 25647), (20, 25653), (28, 25698), (35, 25722), (44, 25809), (50, 25866), (56, 25911), (60, 25953), (66, 25977), (73, 26040), (86, 26079), (103, 26154), (106, 26184), (117, 26265), (122, 26301), (145, 26454), (159, 26535), (161, 26556), (172, 26634), (184, 26715),

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

Candidate Starts for Genamy16_29:

(Start: 17 @23630 has 34 MA's), (18, 23636), (20, 23642), (28, 23687), (35, 23711), (44, 23798), (50, 23855), (56, 23900), (60, 23942), (66, 23966), (86, 24068), (103, 24143), (106, 24173), (117, 24254), (122, 24290), (145, 24443), (152, 24476), (172, 24623), (184, 24704),

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

Candidate Starts for Gibbin_30:

(Start: 17 @25722 has 34 MA's), (18, 25728), (20, 25734), (28, 25779), (35, 25803), (44, 25890), (50, 25947), (56, 25992), (60, 26034), (66, 26058), (73, 26121), (86, 26160), (103, 26235), (106, 26265), (117, 26346), (122, 26382), (145, 26535), (159, 26616), (161, 26637), (172, 26715), (184, 26796),

Gene: Gilgamesh_70 Start: 64726, Stop: 65949, Start Num: 10

Candidate Starts for Gilgamesh_70:

(Start: 10 @64726 has 1 MA's), (41, 64900), (62, 65080), (78, 65218), (116, 65470), (134, 65560), (139, 65587), (140, 65590), (143, 65617), (145, 65662), (146, 65665), (171, 65833), (172, 65839), (176, 65863), (184, 65920),

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

Candidate Starts for Gretellyn_29:

(Start: 17 @25984 has 34 MA's), (18, 25990), (20, 25996), (28, 26041), (35, 26065), (44, 26152), (50, 26209), (56, 26254), (60, 26296), (66, 26320), (73, 26383), (86, 26422), (103, 26497), (106, 26527), (117, 26608), (122, 26644), (145, 26797), (159, 26878), (161, 26899), (172, 26977), (184, 27058),

Gene: Iter_19 Start: 14928, Stop: 16049, Start Num: 16

Candidate Starts for Iter_19:

(Start: 16 @14928 has 29 MA's), (39, 15051), (41, 15072), (67, 15276), (75, 15342), (153, 15798), (162, 15858),

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

Candidate Starts for Jalebi_28:

(Start: 17 @26151 has 34 MA's), (18, 26157), (20, 26163), (28, 26208), (35, 26232), (44, 26319), (50, 26376), (56, 26421), (60, 26463), (86, 26589), (103, 26664), (106, 26694), (117, 26775), (122, 26811), (145, 26964), (159, 27045), (161, 27066), (172, 27144), (184, 27225),

Gene: Janeemi_20 Start: 16175, Stop: 17617, Start Num: 16

Candidate Starts for Janeemi_20:

(Start: 16 @16175 has 29 MA's), (25, 16235), (39, 16298), (68, 16529), (75, 16589), (153, 17366), (168, 17471),

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

Candidate Starts for JanetJ_20:

(Start: 16 @15852 has 29 MA's), (20, 15870), (32, 15930), (57, 16122), (68, 16188), (133, 16518), (141, 16554), (182, 16875), (183, 16881),

Gene: JasmineDragon_19 Start: 13074, Stop: 14306, Start Num: 14

Candidate Starts for JasmineDragon_19:

(Start: 14 @13074 has 2 MA's), (44, 13269), (47, 13293), (92, 13644), (109, 13800), (124, 13890), (143, 13989), (166, 14145), (175, 14226),

Gene: Joemato_21 Start: 14919, Stop: 16040, Start Num: 16

Candidate Starts for Joemato_21:

(Start: 16 @14919 has 29 MA's), (25, 14979), (39, 15042), (41, 15063), (69, 15276), (74, 15327), (75, 15333), (116, 15555), (150, 15771), (153, 15789), (162, 15849),

Gene: JohnDoe_19 Start: 14914, Stop: 16035, Start Num: 16

Candidate Starts for JohnDoe_19:

(Start: 16 @14914 has 29 MA's), (25, 14974), (39, 15037), (41, 15058), (69, 15271), (74, 15322), (75, 15328), (116, 15550), (153, 15784), (162, 15844),

Gene: Jstan_20 Start: 14901, Stop: 16022, Start Num: 16

Candidate Starts for Jstan_20:

(Start: 16 @14901 has 29 MA's), (25, 14961), (27, 14967), (39, 15024), (41, 15045), (74, 15309), (153, 15771),

Gene: JuneStar_19 Start: 15024, Stop: 16145, Start Num: 16

Candidate Starts for JuneStar_19:

(Start: 16 @15024 has 29 MA's), (41, 15168), (50, 15258), (75, 15438), (153, 15894), (184, 16110),

Gene: Kaylissa_19 Start: 14920, Stop: 16041, Start Num: 16

Candidate Starts for Kaylissa_19:

(Start: 16 @14920 has 29 MA's), (25, 14980), (39, 15043), (41, 15064), (69, 15277), (74, 15328), (75, 15334), (116, 15556), (153, 15790), (162, 15850),

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

Candidate Starts for Lambo_29:

(Start: 17 @25656 has 34 MA's), (18, 25662), (28, 25713), (35, 25737), (44, 25824), (50, 25881), (56, 25926), (60, 25968), (66, 25992), (73, 26055), (86, 26094), (103, 26169), (106, 26199), (117, 26280), (122, 26316), (145, 26469), (172, 26649),

Gene: Lego_19 Start: 14919, Stop: 16040, Start Num: 16

Candidate Starts for Lego_19:

(Start: 16 @14919 has 29 MA's), (25, 14979), (39, 15042), (41, 15063), (69, 15276), (74, 15327), (75, 15333), (116, 15555), (150, 15771), (153, 15789), (162, 15849),

Gene: Leopard_38 Start: 28522, Stop: 29766, Start Num: 9

Candidate Starts for Leopard_38:

(6, 28474), (8, 28510), (Start: 9 @28522 has 3 MA's), (28, 28621), (34, 28639), (46, 28756), (54, 28825), (58, 28858), (59, 28867), (64, 28894), (69, 28918), (71, 28927), (86, 29002), (105, 29098), (108, 29134), (117, 29188), (120, 29209), (123, 29227), (124, 29233), (125, 29236), (127, 29248), (146, 29380), (147, 29383), (170, 29545), (172, 29557), (174, 29566), (190, 29701), (191, 29743),

Gene: Liebe_18 Start: 13443, Stop: 14564, Start Num: 16

Candidate Starts for Liebe_18:

(Start: 16 @13443 has 29 MA's), (29, 13512), (38, 13554), (39, 13566), (41, 13587), (74, 13851), (99, 13935), (127, 14142), (131, 14154), (153, 14313), (162, 14373), (169, 14430), (174, 14457), (175, 14466),

Gene: Lila22_30 Start: 25623, Stop: 26735, Start Num: 20

Candidate Starts for Lila22_30:

(Start: 17 @25611 has 34 MA's), (18, 25617), (20, 25623), (28, 25668), (35, 25692), (44, 25779), (50, 25836), (56, 25881), (60, 25923), (66, 25947), (73, 26010), (86, 26049), (103, 26124), (106, 26154),

(117, 26235), (122, 26271), (145, 26424), (159, 26505), (161, 26526), (172, 26604),

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

Candidate Starts for LilyPad_25:

(Start: 17 @20787 has 34 MA's), (25, 20838), (28, 20847), (34, 20865), (39, 20904), (41, 20925), (48, 21000), (55, 21060), (66, 21129), (74, 21198), (130, 21486), (134, 21504), (140, 21534), (142, 21558), (145, 21606), (166, 21720), (172, 21786), (173, 21792), (179, 21825), (181, 21831), (183, 21864), (186, 21879),

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

Candidate Starts for LittleFella_26:

(Start: 17 @22663 has 34 MA's), (27, 22720), (28, 22723), (41, 22801), (45, 22843), (49, 22879), (60, 22981), (66, 23005), (68, 23020), (74, 23074), (75, 23080), (101, 23167), (112, 23251), (127, 23353), (130, 23362), (134, 23380), (135, 23386), (142, 23434), (145, 23482), (159, 23563), (163, 23590), (166, 23596), (172, 23662), (173, 23668), (179, 23701), (181, 23707), (183, 23740), (184, 23746), (186, 23755),

Gene: Lizalica_19 Start: 14904, Stop: 16025, Start Num: 16

Candidate Starts for Lizalica_19:

(Start: 16 @14904 has 29 MA's), (25, 14964), (39, 15027), (41, 15048), (74, 15312), (75, 15318), (150, 15756), (153, 15774), (162, 15834),

Gene: London_19 Start: 14901, Stop: 16022, Start Num: 16

Candidate Starts for London_19:

(Start: 16 @14901 has 29 MA's), (25, 14961), (27, 14967), (39, 15024), (41, 15045), (74, 15309), (153, 15771),

Gene: LuckyBarnes_26 Start: 21950, Stop: 23038, Start Num: 13

Candidate Starts for LuckyBarnes_26:

(Start: 13 @21950 has 1 MA's), (31, 22034), (35, 22049), (60, 22274), (94, 22403), (96, 22415), (106, 22487), (108, 22514), (124, 22607), (133, 22646), (138, 22673), (140, 22679), (143, 22706), (156, 22805), (164, 22859), (167, 22883), (178, 22964),

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

Candidate Starts for LuckyLeo_28:

(Start: 17 @24963 has 34 MA's), (18, 24969), (28, 25020), (35, 25044), (44, 25131), (50, 25188), (56, 25233), (60, 25275), (65, 25296), (66, 25299), (73, 25362), (86, 25401), (93, 25404), (103, 25476), (106, 25506), (117, 25587), (122, 25623), (145, 25776), (172, 25956),

Gene: MaGuCo_18 Start: 13377, Stop: 14498, Start Num: 16

Candidate Starts for MaGuCo_18:

(Start: 16 @13377 has 29 MA's), (39, 13500), (41, 13521), (75, 13791), (99, 13869), (127, 14076), (131, 14088), (150, 14229), (153, 14247), (162, 14307), (169, 14364), (174, 14391), (175, 14400),

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

Candidate Starts for Madi_24:

(Start: 17 @20204 has 34 MA's), (39, 20321), (41, 20342), (43, 20354), (44, 20375), (45, 20384), (48, 20417), (66, 20546), (74, 20615), (107, 20765), (117, 20834), (121, 20858), (130, 20903), (134, 20921), (138, 20945), (142, 20975), (163, 21131), (166, 21137), (172, 21203), (173, 21209), (179, 21242), (183, 21281),

Gene: Maureen_18 Start: 13443, Stop: 14564, Start Num: 16

Candidate Starts for Maureen_18:

(Start: 16 @13443 has 29 MA's), (29, 13512), (38, 13554), (39, 13566), (41, 13587), (74, 13851), (99, 13935), (127, 14142), (131, 14154), (153, 14313), (162, 14373), (169, 14430), (174, 14457), (175, 14466),

Gene: MiniMommy_18 Start: 13075, Stop: 14307, Start Num: 14

Candidate Starts for MiniMommy_18:

(Start: 14 @13075 has 2 MA's), (44, 13270), (47, 13294), (92, 13645), (109, 13801), (124, 13891), (143, 13990), (166, 14146), (175, 14227),

Gene: MoiGyank_32 Start: 26021, Stop: 27145, Start Num: 17

Candidate Starts for MoiGyank_32:

(Start: 17 @26021 has 34 MA's), (18, 26027), (20, 26033), (28, 26078), (35, 26102), (44, 26189), (50, 26246), (56, 26291), (60, 26333), (86, 26459), (103, 26534), (106, 26564), (117, 26645), (122, 26681), (145, 26834), (159, 26915), (161, 26936), (172, 27014), (184, 27095),

Gene: MontyDev_29 Start: 23090, Stop: 24277, Start Num: 12

Candidate Starts for MontyDev_29:

(4, 22985), (5, 22991), (Start: 12 @23090 has 11 MA's), (19, 23117), (20, 23120), (30, 23165), (33, 23177), (35, 23186), (66, 23462), (69, 23480), (82, 23558), (84, 23567), (86, 23582), (122, 23804), (125, 23816), (145, 23957), (146, 23960), (162, 24065), (168, 24110), (172, 24140), (176, 24164), (178, 24176), (179, 24179), (185, 24227), (189, 24266),

Gene: Moss_21 Start: 14619, Stop: 16067, Start Num: 16

Candidate Starts for Moss_21:

(Start: 16 @14619 has 29 MA's), (24, 14673), (74, 15027), (75, 15033), (115, 15579), (124, 15630), (155, 15825),

Gene: MrMiyagi_23 Start: 19394, Stop: 20566, Start Num: 12

Candidate Starts for MrMiyagi_23:

(11, 19382), (Start: 12 @19394 has 11 MA's), (23, 19448), (26, 19463), (34, 19484), (50, 19655), (54, 19691), (69, 19784), (75, 19841), (86, 19868), (97, 19901), (102, 19937), (106, 19973), (120, 20075), (122, 20090), (146, 20246), (172, 20423), (174, 20432), (175, 20441), (179, 20462), (180, 20465), (185, 20510),

Gene: Mudpuppy_20 Start: 14918, Stop: 16039, Start Num: 16

Candidate Starts for Mudpuppy_20:

(Start: 16 @14918 has 29 MA's), (25, 14978), (39, 15041), (41, 15062), (69, 15275), (74, 15326), (75, 15332), (116, 15554), (150, 15770), (153, 15788), (162, 15848),

Gene: Nilo_30 Start: 23446, Stop: 24633, Start Num: 12

Candidate Starts for Nilo_30:

(4, 23341), (5, 23347), (7, 23386), (Start: 12 @23446 has 11 MA's), (19, 23473), (20, 23476), (30, 23521), (33, 23533), (35, 23542), (50, 23707), (66, 23818), (69, 23836), (82, 23914), (84, 23923), (86, 23938), (122, 24160), (125, 24172), (145, 24313), (146, 24316), (162, 24421), (168, 24466), (172, 24496), (176, 24520), (178, 24532), (179, 24535), (185, 24583), (189, 24622),

Gene: Niobe_19 Start: 14901, Stop: 16022, Start Num: 16

Candidate Starts for Niobe_19:

(Start: 16 @14901 has 29 MA's), (25, 14961), (27, 14967), (39, 15024), (41, 15045), (74, 15309), (153, 15771),

Gene: Nitro_19 Start: 14929, Stop: 16050, Start Num: 16

Candidate Starts for Nitro_19:

(Start: 16 @14929 has 29 MA's), (25, 14989), (39, 15052), (41, 15073), (75, 15343), (100, 15430), (153, 15799),

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

Candidate Starts for NorManre_30:

(Start: 17 @25228 has 34 MA's), (18, 25234), (20, 25240), (28, 25285), (35, 25309), (44, 25396), (50, 25453), (56, 25498), (60, 25540), (66, 25564), (73, 25627), (86, 25666), (103, 25741), (106, 25771), (117, 25852), (122, 25888), (145, 26041), (159, 26122), (161, 26143), (172, 26221), (184, 26302),

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

Candidate Starts for NovaSharks_28:

(Start: 17 @23220 has 34 MA's), (18, 23226), (20, 23232), (28, 23277), (35, 23301), (44, 23388), (50, 23445), (56, 23490), (60, 23532), (66, 23556), (86, 23658), (103, 23733), (106, 23763), (117, 23844), (122, 23880), (145, 24033), (152, 24066), (172, 24213), (184, 24294),

Gene: OnionKnight_20 Start: 16035, Stop: 17189, Start Num: 63

Candidate Starts for OnionKnight_20:

(3, 15387), (36, 15777), (61, 16023), (Start: 63 @16035 has 1 MA's), (72, 16101), (80, 16245), (81, 16251), (87, 16395), (90, 16440), (95, 16491), (98, 16506), (104, 16572), (111, 16632), (136, 16800), (137, 16803), (138, 16812), (144, 16851), (149, 16908), (151, 16926), (152, 16929), (154, 16944), (157, 16953), (158, 16971), (160, 16992), (165, 17010), (168, 17049), (177, 17112), (179, 17124), (186, 17178), (187, 17184),

Gene: Onyinye_39 Start: 28401, Stop: 29645, Start Num: 9

Candidate Starts for Onyinye_39:

(6, 28353), (8, 28389), (Start: 9 @28401 has 3 MA's), (28, 28500), (34, 28518), (46, 28635), (54, 28704), (58, 28737), (59, 28746), (64, 28773), (71, 28806), (86, 28881), (105, 28977), (108, 29013), (117, 29067), (120, 29088), (123, 29106), (124, 29112), (125, 29115), (127, 29127), (146, 29259), (147, 29262), (170, 29424), (172, 29436), (174, 29445), (190, 29580), (191, 29622),

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

Candidate Starts for OtterstedtS21_29:

(Start: 17 @25306 has 34 MA's), (18, 25312), (20, 25318), (28, 25363), (35, 25387), (44, 25474), (50, 25531), (56, 25576), (60, 25618), (86, 25744), (103, 25819), (106, 25849), (117, 25930), (122, 25966), (145, 26119), (159, 26200), (161, 26221), (172, 26299), (184, 26380),

Gene: Papyrus_29 Start: 23111, Stop: 24298, Start Num: 12

Candidate Starts for Papyrus_29:

(4, 23006), (5, 23012), (Start: 12 @23111 has 11 MA's), (19, 23138), (20, 23141), (30, 23186), (33, 23198), (35, 23207), (66, 23483), (69, 23501), (82, 23579), (84, 23588), (86, 23603), (93, 23606), (122, 23825), (125, 23837), (145, 23978), (146, 23981), (162, 24086), (168, 24131), (172, 24161), (176, 24185), (178, 24197), (179, 24200), (185, 24248), (189, 24287),

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

Candidate Starts for ParvusTarda_29:

(Start: 17 @24788 has 34 MA's), (18, 24794), (20, 24800), (28, 24845), (35, 24869), (44, 24956), (50, 25013), (56, 25058), (60, 25100), (66, 25124), (73, 25187), (86, 25226), (103, 25301), (106, 25331), (117, 25412), (122, 25448), (128, 25475), (145, 25601), (172, 25781),

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

Candidate Starts for Patos_30:

(Start: 17 @25228 has 34 MA's), (18, 25234), (20, 25240), (28, 25285), (35, 25309), (44, 25396), (50, 25453), (56, 25498), (60, 25540), (66, 25564), (73, 25627), (86, 25666), (103, 25741), (106, 25771),

(117, 25852), (122, 25888), (145, 26041), (159, 26122), (161, 26143), (172, 26221), (184, 26302),

Gene: Penjamin420_31 Start: 25439, Stop: 26563, Start Num: 17

Candidate Starts for Penjamin420_31:

(Start: 17 @25439 has 34 MA's), (18, 25445), (20, 25451), (28, 25496), (35, 25520), (44, 25607), (50, 25664), (56, 25709), (65, 25772), (66, 25775), (73, 25838), (86, 25877), (93, 25880), (103, 25952), (106, 25982), (117, 26063), (122, 26099), (145, 26252), (159, 26333), (161, 26354), (172, 26432), (184, 26513),

Gene: Phives_20 Start: 16011, Stop: 17453, Start Num: 16

Candidate Starts for Phives_20:

(Start: 16 @16011 has 29 MA's), (25, 16071), (27, 16077), (39, 16134), (41, 16155), (51, 16248), (68, 16365), (73, 16413), (79, 16533), (91, 16752), (138, 17082), (150, 17184), (153, 17202), (185, 17421),

Gene: Pixelle_19 Start: 14954, Stop: 16396, Start Num: 16

Candidate Starts for Pixelle_19:

(Start: 16 @14954 has 29 MA's), (25, 15014), (27, 15020), (39, 15077), (68, 15308), (73, 15356), (74, 15362), (79, 15476), (91, 15695), (138, 16025), (150, 16127), (153, 16145), (185, 16364),

Gene: Powerpuff_19 Start: 14970, Stop: 16091, Start Num: 16

Candidate Starts for Powerpuff_19:

(Start: 16 @14970 has 29 MA's), (25, 15030), (39, 15093), (41, 15114), (69, 15327), (74, 15378), (75, 15384), (116, 15606), (150, 15822), (153, 15840), (162, 15900),

Gene: Pumpkins_33 Start: 15036, Stop: 16157, Start Num: 16

Candidate Starts for Pumpkins_33:

(1, 14664), (2, 14709), (Start: 16 @15036 has 29 MA's), (40, 15171), (41, 15180), (50, 15270), (74, 15444), (75, 15450), (153, 15906),

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

Candidate Starts for Ranch_29:

(Start: 17 @24142 has 34 MA's), (18, 24148), (20, 24154), (28, 24199), (35, 24223), (44, 24310), (50, 24367), (56, 24412), (60, 24454), (66, 24478), (73, 24541), (86, 24580), (103, 24655), (106, 24685), (117, 24766), (122, 24802), (145, 24955), (159, 25036), (161, 25057), (172, 25135), (184, 25216),

Gene: Riparian_29 Start: 22907, Stop: 24094, Start Num: 12

Candidate Starts for Riparian_29:

(4, 22802), (5, 22808), (Start: 12 @22907 has 11 MA's), (19, 22934), (20, 22937), (30, 22982), (33, 22994), (35, 23003), (50, 23168), (66, 23279), (69, 23297), (82, 23375), (84, 23384), (86, 23399), (122, 23621), (125, 23633), (145, 23774), (146, 23777), (162, 23882), (168, 23927), (172, 23957), (176, 23981), (178, 23993), (179, 23996), (185, 24044), (189, 24083),

Gene: Rope_29 Start: 23093, Stop: 24280, Start Num: 12

Candidate Starts for Rope_29:

(4, 22988), (5, 22994), (Start: 12 @23093 has 11 MA's), (19, 23120), (20, 23123), (30, 23168), (33, 23180), (35, 23189), (50, 23354), (66, 23465), (69, 23483), (82, 23561), (84, 23570), (86, 23585), (93, 23588), (122, 23807), (125, 23819), (145, 23960), (146, 23963), (162, 24068), (168, 24113), (172, 24143), (176, 24167), (178, 24179), (179, 24182), (185, 24230), (189, 24269),

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

Candidate Starts for Rumi_28:

(Start: 17 @23223 has 34 MA's), (18, 23229), (20, 23235), (28, 23280), (35, 23304), (44, 23391), (50, 23448), (56, 23493), (60, 23535), (66, 23559), (86, 23661), (103, 23736), (106, 23766), (117, 23847),

(122, 23883), (145, 24036), (152, 24069), (172, 24216), (184, 24297),

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

Candidate Starts for Sadboi_29:

(Start: 17 @25984 has 34 MA's), (18, 25990), (20, 25996), (28, 26041), (35, 26065), (44, 26152), (50, 26209), (56, 26254), (60, 26296), (66, 26320), (73, 26383), (86, 26422), (103, 26497), (106, 26527), (117, 26608), (122, 26644), (145, 26797), (159, 26878), (161, 26899), (172, 26977), (184, 27058),

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

Candidate Starts for Sampudon_29:

(Start: 17 @26151 has 34 MA's), (18, 26157), (20, 26163), (28, 26208), (35, 26232), (44, 26319), (50, 26376), (56, 26421), (60, 26463), (86, 26589), (103, 26664), (106, 26694), (117, 26775), (122, 26811), (145, 26964), (159, 27045), (161, 27066), (172, 27144), (184, 27225),

Gene: Send513_29 Start: 23449, Stop: 24636, Start Num: 12

Candidate Starts for Send513_29:

(4, 23344), (5, 23350), (Start: 12 @23449 has 11 MA's), (19, 23476), (20, 23479), (30, 23524), (33, 23536), (35, 23545), (50, 23710), (66, 23821), (69, 23839), (82, 23917), (84, 23926), (86, 23941), (122, 24163), (125, 24175), (145, 24316), (146, 24319), (162, 24424), (168, 24469), (172, 24499), (176, 24523), (178, 24535), (179, 24538), (185, 24586), (189, 24625),

Gene: ShakeltOph_19 Start: 13074, Stop: 14306, Start Num: 14

Candidate Starts for ShakeltOph_19:

(Start: 14 @13074 has 2 MA's), (44, 13269), (47, 13293), (92, 13644), (109, 13800), (124, 13890), (143, 13989), (166, 14145), (175, 14226),

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

Candidate Starts for Sienna_24:

(Start: 17 @20204 has 34 MA's), (39, 20321), (41, 20342), (43, 20354), (44, 20375), (45, 20384), (48, 20417), (74, 20615), (107, 20765), (121, 20858), (130, 20903), (134, 20921), (140, 20951), (142, 20975), (163, 21131), (166, 21137), (168, 21173), (172, 21203), (173, 21209), (179, 21242), (183, 21281),

Gene: Simpson_21 Start: 14919, Stop: 16040, Start Num: 16

Candidate Starts for Simpson_21:

(Start: 16 @14919 has 29 MA's), (25, 14979), (39, 15042), (41, 15063), (69, 15276), (74, 15327), (75, 15333), (116, 15555), (150, 15771), (153, 15789), (162, 15849),

Gene: Soondubu_18 Start: 15573, Stop: 16658, Start Num: 13

Candidate Starts for Soondubu_18:

(Start: 13 @15573 has 1 MA's), (22, 15627), (59, 15885), (113, 16146), (143, 16323), (145, 16368), (181, 16593), (182, 16620), (188, 16650),

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

Candidate Starts for Suzy_24:

(Start: 17 @21365 has 34 MA's), (39, 21482), (41, 21503), (44, 21536), (45, 21545), (66, 21707), (107, 21926), (117, 21995), (127, 22055), (130, 22064), (134, 22082), (138, 22106), (142, 22136), (163, 22292), (166, 22298), (172, 22364), (173, 22370), (179, 22403), (183, 22442), (186, 22457),

Gene: Tallboi_20 Start: 14933, Stop: 16054, Start Num: 16

Candidate Starts for Tallboi_20:

(Start: 16 @14933 has 29 MA's), (25, 14993), (27, 14999), (39, 15056), (41, 15077), (51, 15170), (74, 15341), (75, 15347), (116, 15569), (150, 15785), (153, 15803),

Gene: Tbone_19 Start: 14923, Stop: 16044, Start Num: 16

Candidate Starts for Tbone_19:

(Start: 16 @14923 has 29 MA's), (25, 14983), (39, 15046), (41, 15067), (69, 15280), (74, 15331), (75, 15337), (116, 15559), (150, 15775), (153, 15793), (162, 15853),

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

Candidate Starts for Terapin_24:

(Start: 17 @20204 has 34 MA's), (39, 20321), (41, 20342), (43, 20354), (44, 20375), (45, 20384), (48, 20417), (66, 20546), (74, 20615), (107, 20765), (117, 20834), (121, 20858), (130, 20903), (134, 20921), (138, 20945), (142, 20975), (163, 21131), (166, 21137), (172, 21203), (173, 21209), (179, 21242), (183, 21281),

Gene: TforTroy_19 Start: 15054, Stop: 16175, Start Num: 16

Candidate Starts for TforTroy_19:

(Start: 16 @15054 has 29 MA's), (40, 15189), (41, 15198), (50, 15288), (74, 15462), (75, 15468), (85, 15501), (153, 15924),

Gene: Tian_19 Start: 14951, Stop: 16393, Start Num: 16

Candidate Starts for Tian_19:

(Start: 16 @14951 has 29 MA's), (25, 15011), (27, 15017), (39, 15074), (41, 15095), (68, 15305), (73, 15353), (79, 15473), (91, 15692), (138, 16022), (150, 16124), (153, 16142), (185, 16361),

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

Candidate Starts for Tillicus_29:

(Start: 17 @24557 has 34 MA's), (18, 24563), (28, 24614), (35, 24638), (44, 24725), (50, 24782), (56, 24827), (60, 24869), (65, 24890), (66, 24893), (73, 24956), (86, 24995), (93, 24998), (103, 25070), (106, 25100), (117, 25181), (122, 25217), (145, 25370), (161, 25472), (163, 25478), (172, 25550),

Gene: Tuck_20 Start: 16127, Stop: 17569, Start Num: 16

Candidate Starts for Tuck_20:

(Start: 16 @16127 has 29 MA's), (25, 16187), (27, 16193), (39, 16250), (68, 16481), (75, 16541), (88, 16835), (89, 16856), (153, 17318), (164, 17384),

Gene: Turab_19 Start: 14930, Stop: 16051, Start Num: 16

Candidate Starts for Turab_19:

(Start: 16 @14930 has 29 MA's), (25, 14990), (39, 15053), (41, 15074), (74, 15338), (99, 15422), (150, 15782), (153, 15800), (162, 15860),

Gene: Tutumahutu_19 Start: 14970, Stop: 16091, Start Num: 16

Candidate Starts for Tutumahutu_19:

(Start: 16 @14970 has 29 MA's), (25, 15030), (39, 15093), (41, 15114), (69, 15327), (74, 15378), (75, 15384), (116, 15606), (150, 15822), (153, 15840), (162, 15900),

Gene: VroomVroom_18 Start: 13087, Stop: 14322, Start Num: 14

Candidate Starts for VroomVroom_18:

(Start: 14 @13087 has 2 MA's), (44, 13282), (47, 13306), (76, 13528), (92, 13657), (109, 13813), (124, 13906), (143, 14005), (166, 14161), (175, 14242),

Gene: Warda_19 Start: 14915, Stop: 16036, Start Num: 16

Candidate Starts for Warda_19:

(Start: 16 @14915 has 29 MA's), (25, 14975), (39, 15038), (41, 15059), (69, 15272), (74, 15323), (75, 15329), (116, 15551), (150, 15767), (153, 15785), (162, 15845),

Gene: Weiss13_29 Start: 23139, Stop: 24326, Start Num: 12

Candidate Starts for Weiss13_29:

(4, 23034), (5, 23040), (Start: 12 @23139 has 11 MA's), (19, 23166), (20, 23169), (30, 23214), (33, 23226), (35, 23235), (50, 23400), (66, 23511), (69, 23529), (82, 23607), (84, 23616), (86, 23631), (122, 23853), (125, 23865), (145, 24006), (146, 24009), (162, 24114), (168, 24159), (172, 24189), (176, 24213), (178, 24225), (179, 24228), (185, 24276), (189, 24315),

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

Candidate Starts for Wojtek_28:

(Start: 17 @24861 has 34 MA's), (18, 24867), (20, 24873), (28, 24918), (35, 24942), (44, 25029), (50, 25086), (56, 25131), (60, 25173), (66, 25197), (73, 25260), (86, 25299), (103, 25374), (106, 25404), (117, 25485), (122, 25521), (128, 25548), (145, 25674), (172, 25854),

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

Candidate Starts for Xenia2_29:

(Start: 17 @24947 has 34 MA's), (46, 25139), (50, 25172), (54, 25208), (56, 25217), (60, 25259), (75, 25358), (86, 25385), (93, 25388), (114, 25538), (118, 25583), (119, 25586), (122, 25607), (139, 25685), (145, 25760), (168, 25910), (172, 25940), (176, 25964), (183, 26015),

Gene: Yang_19 Start: 15026, Stop: 16147, Start Num: 16

Candidate Starts for Yang_19:

(Start: 16 @15026 has 29 MA's), (41, 15170), (50, 15260), (70, 15386), (150, 15878), (153, 15896), (184, 16112),

Gene: Yelo_29 Start: 23432, Stop: 24619, Start Num: 12

Candidate Starts for Yelo_29:

(4, 23327), (5, 23333), (Start: 12 @23432 has 11 MA's), (19, 23459), (20, 23462), (30, 23507), (33, 23519), (35, 23528), (50, 23693), (66, 23804), (69, 23822), (82, 23900), (84, 23909), (86, 23924), (122, 24146), (125, 24158), (145, 24299), (146, 24302), (162, 24407), (168, 24452), (172, 24482), (176, 24506), (178, 24518), (179, 24521), (185, 24569), (189, 24608),

Gene: YesChef_19 Start: 14970, Stop: 16091, Start Num: 16

Candidate Starts for YesChef_19:

(Start: 16 @14970 has 29 MA's), (25, 15030), (39, 15093), (41, 15114), (69, 15327), (74, 15378), (75, 15384), (116, 15606), (150, 15822), (153, 15840), (162, 15900),

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

Candidate Starts for Yikes_30:

(Start: 17 @26236 has 34 MA's), (18, 26242), (20, 26248), (28, 26293), (35, 26317), (44, 26404), (50, 26461), (56, 26506), (60, 26548), (86, 26674), (103, 26749), (106, 26779), (117, 26860), (122, 26896), (145, 27049), (159, 27130), (161, 27151), (172, 27229), (184, 27310),

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

Candidate Starts for Zany_28:

(Start: 17 @25757 has 34 MA's), (18, 25763), (20, 25769), (28, 25814), (35, 25838), (44, 25925), (50, 25982), (56, 26027), (60, 26069), (66, 26093), (73, 26156), (86, 26195), (103, 26270), (106, 26300), (117, 26381), (122, 26417), (145, 26570), (172, 26750), (184, 26831),

Gene: Zenon_30 Start: 23451, Stop: 24638, Start Num: 12

Candidate Starts for Zenon_30:

(4, 23346), (5, 23352), (Start: 12 @23451 has 11 MA's), (19, 23478), (20, 23481), (30, 23526), (33, 23538), (35, 23547), (50, 23712), (66, 23823), (69, 23841), (82, 23919), (84, 23928), (86, 23943),

(122, 24165), (125, 24177), (145, 24318), (146, 24321), (162, 24426), (168, 24471), (172, 24501),
(176, 24525), (178, 24537), (179, 24540), (185, 24588), (189, 24627),

Gene: pZL12_48c Start: 37533, Stop: 36430, Start Num: 15

Candidate Starts for pZL12_48c:

(15, 37533), (39, 37407), (50, 37308), (53, 37293), (64, 37194), (115, 36936), (126, 36876), (133,
36846), (169, 36582),