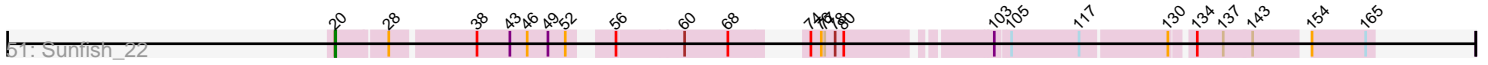


Pham 304913



Lined writing area for notes or analysis.

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 304913 Report

This analysis was run 06/08/26 on database version 649.

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 304913 has 88 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Ranunculus_15
- Track 2 : Wilde_15
- Track 3 : Tank_15
- Track 4 : Rizwana_14
- Track 5 : Popstraw_19
- Track 6 : Hive_19
- Track 7 : BetaFish_20, Beagle_21, Pointis_20, Odyssey395_22, DogYard_20, Pureglobe5_22, Kubulix_21
- Track 8 : Nikan_16
- Track 9 : Ollypop_18
- Track 10 : Forrestell_17
- Track 11 : NyleyClemson_16, MellowYellow_17
- Track 12 : PhuzzTulsa_18
- Track 13 : Ren19_14
- Track 14 : RazzB_16
- Track 15 : RIPWilbur_18
- Track 16 : BruhMoment_16
- Track 17 : AWGoat_15
- Track 18 : SilentRX_16
- Track 19 : MorillMayhem_19, BaconCheese_22, Mila11_22
- Track 20 : Tempo_19, KillerQueen_20, RobinRose_20, CandC_18, Kelcole_18, Romm_20, OneinaGillian_19, Fregley_20
- Track 21 : Mentos_24
- Track 22 : Fizzles_20
- Track 23 : Zagie_20, Rudy_18, SlySloth_22, Quammi_18, Rowlf_16, Llemily_19, Sillytadpoles_19, Viceroy_19
- Track 24 : BirdInFrench_19, Wilca_19
- Track 25 : Tissue_19, Zhafia_22, Namago_20
- Track 26 : Mashley_17, Lonelysoil_19
- Track 27 : StrawberryJamm_22
- Track 28 : Hyperion_18
- Track 29 : Gazebo_19, Statler_20
- Track 30 : Fransoyer_21, RubyRalph_21

- Track 31 : SadLad_22
- Track 32 : Casend_21, Jehoshaphat_22, Wheelie_19, FrankDeliGuy_17, Teehee_21, DonaldDuck_19, Wayne3_21
- Track 33 : EverythinBagel_19
- Track 34 : Pepe25_18
- Track 35 : Marcie_24
- Track 36 : AluminumJesus_17
- Track 37 : Altheas_21
- Track 38 : WheelerS25_25
- Track 39 : Phinky_26
- Track 40 : Nike_20, Squash_22
- Track 41 : Kyva_22, Grassboy_21
- Track 42 : BabyDotz_19
- Track 43 : Judebell_22
- Track 44 : Phabia_20
- Track 45 : Blab_17
- Track 46 : SallyK_21
- Track 47 : Boise_11
- Track 48 : RomansRevenge_11
- Track 49 : OnionKnight_2
- Track 50 : Kithara_20
- Track 51 : Sunfish_22

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

The start number called the most often in the published annotations is 16, it was called in 51 of the 73 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Altheas_21, AluminumJesus_17, BabyDotz_19, BaconCheese_22, BirdInFrench_19, Blab_17, CandC_18, Casend_21, DonaldDuck_19, EverythinBagel_19, Fizzles_20, FrankDeliGuy_17, Fransoyer_21, Fregley_20, Gazebo_19, Grassboy_21, Hyperion_18, Jehoshaphat_22, Judebell_22, Kelcole_18, KillerQueen_20, Kyva_22, Lemily_19, Lonelysoil_19, Marcie_24, Mashley_17, Mentos_24, Mila11_22, MorillMayhem_19, Namago_20, Nike_20, OneinaGillian_19, Pepe25_18, Phabia_20, Phinky_26, Quammi_18, RobinRose_20, Romm_20, Rowlf_16, RubyRalph_21, Rudy_18, SadLad_22, SallyK_21, Sillytadpoles_19, SlySloth_22, Squash_22, Statler_20, StrawberryJamm_22, Teehee_21, Tempo_19, Tissue_19, Viceroy_19, Wayne3_21, WheelerS25_25, Wheelie_19, Wilca_19, Zagie_20, Zhafia_22,

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

-

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

- AWGoat_15, Beagle_21, BetaFish_20, Boise_11, BruhMoment_16, DogYard_20, Forrestell_17, Hive_19, Kithara_20, Kubulix_21, MellowYellow_17, Nikan_16, NyleyClemson_16, Odyssey395_22, Ollypop_18, OnionKnight_2, PhuzzTulsa_18, Pointis_20, Popstraw_19, Pureglobe5_22, RIPWilbur_18, Ranunculus_15, RazzB_16, Ren19_14, Rizwana_14, RomansRevenge_11, SilentRX_16, Sunfish_22,

Tank_15, Wilde_15,

Summary by start number:

Start 16:

- Found in 58 of 88 (65.9%) of genes in pham
- Manual Annotations of this start: 51 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altheas_21 (EG), AluminumJesus_17 (EG), BabyDotz_19 (EG), BaconCheese_22 (EG), BirdInFrench_19 (EG), Blab_17 (EG), CandC_18 (EG), Casend_21 (EG), DonaldDuck_19 (EG), EverythinBagel_19 (EG), Fizzles_20 (EG), FrankDeliGuy_17 (EG), Fransoyer_21 (EG), Fregley_20 (EG), Gazebo_19 (EG), Grassboy_21 (EG), Hyperion_18 (EG), Jehoshaphat_22 (EG), Judebell_22 (EG), Kelcole_18 (EG), KillerQueen_20 (EG), Kyva_22 (EG), Llemily_19 (EG), Lonelysoil_19 (EG), Marcie_24 (EG), Mashley_17 (EG), Mentos_24 (EG), Mila11_22 (EG), MorillMayhem_19 (EG), Namago_20 (EG), Nike_20 (EG), OneinaGillian_19 (EG), Pepe25_18 (EG), Phabia_20 (EG), Phinky_26 (EG), Quammi_18 (EG), RobinRose_20 (EG), Romm_20 (EG), Rowlf_16 (EG), RubyRalph_21 (EG), Rudy_18 (EG), SadLad_22 (EG), SallyK_21 (EG), Sillytadpoles_19 (EG), SlySloth_22 (EG), Squash_22 (EG), Statler_20 (EG), StrawberryJamm_22 (EG), Teehee_21 (EG), Tempo_19 (EG), Tissue_19 (EG), Viceroy_19 (EG), Wayne3_21 (EG), WheelerS25_25 (EG), Wheelie_19 (EG), Wilca_19 (EG), Zagie_20 (EG), Zhafia_22 (EG),

Start 17:

- Found in 1 of 88 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kithara_20 (singleton),

Start 19:

- Found in 2 of 88 (2.3%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 50.0% of time when present
- Phage (with cluster) where this start called: RomansRevenge_11 (FT),

Start 20:

- Found in 26 of 88 (29.5%) of genes in pham
- Manual Annotations of this start: 18 of 73
- Called 96.2% of time when present
- Phage (with cluster) where this start called: AWGoat_15 (AP4), Beagle_21 (AP2), BetaFish_20 (AP2), DogYard_20 (AP2), Forrestell_17 (AP2), Hive_19 (AP2), Kubulix_21 (AP2), MellowYellow_17 (AP2), Nikan_16 (AP2), NyleyClemson_16 (AP2), Odyssey395_22 (AP2), Ollypop_18 (AP2), PhuzzTulsa_18 (AP2), Pointis_20 (AP2), Popstraw_19 (AP2), Pureglobe5_22 (AP2), RIPWilbur_18 (AP2), Ranunculus_15 (AP), RazzB_16 (AP2), Ren19_14 (AP2), Rizwana_14 (AP1), SilentRX_16 (AP4), Sunfish_22 (singleton), Tank_15 (AP1), Wilde_15 (AP1),

Start 21:

- Found in 2 of 88 (2.3%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Boise_11 (FT),

Start 25:

- Found in 1 of 88 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: OnionKnight_2 (singleton),

Start 44:

- Found in 52 of 88 (59.1%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 1.9% of time when present
- Phage (with cluster) where this start called: BruhMoment_16 (AP3),

Summary by clusters:

There are 8 clusters represented in this pham: singleton, FT, AP2, AP3, EG, AP1, AP4, AP,

Info for manual annotations of cluster AP:

- Start number 20 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP1:

- Start number 20 was manually annotated 3 times for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 20 was manually annotated 11 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 44 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 20 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster EG:

- Start number 16 was manually annotated 51 times for cluster EG.

Info for manual annotations of cluster FT:

- Start number 19 was manually annotated 1 time for cluster FT.

Gene Information:

Gene: AWGoat_15 Start: 6667, Stop: 8379, Start Num: 20

Candidate Starts for AWGoat_15:

(1, 6130), (2, 6289), (Start: 20 @6667 has 18 MA's), (22, 6688), (37, 6883), (Start: 44 @6949 has 1 MA's), (49, 7012), (52, 7042), (53, 7060), (55, 7069), (58, 7222), (62, 7276), (63, 7279), (67, 7309), (68, 7312), (69, 7333), (71, 7348), (77, 7408), (80, 7441), (91, 7582), (94, 7615), (116, 7807), (117, 7834), (122, 7876), (124, 7885), (125, 7906), (129, 7951), (131, 7966), (134, 7990), (135, 8002), (137, 8032), (138, 8044), (148, 8113), (151, 8122), (160, 8209), (162, 8224), (164, 8230), (170, 8281), (174, 8338), (175, 8347), (176, 8365),

Gene: Altheas_21 Start: 6863, Stop: 8374, Start Num: 16

Candidate Starts for Altheas_21:

(14, 6839), (Start: 16 @6863 has 51 MA's), (26, 6956), (40, 7106), (Start: 44 @7160 has 1 MA's), (49, 7223), (56, 7298), (60, 7409), (66, 7466), (70, 7511), (73, 7622), (75, 7634), (76, 7646), (80, 7685), (83, 7736), (104, 7895), (116, 8003), (119, 8036), (123, 8078), (134, 8189), (135, 8201), (137, 8234),

Gene: AluminumJesus_17 Start: 6227, Stop: 7738, Start Num: 16

Candidate Starts for AluminumJesus_17:

(3, 5888), (6, 5930), (13, 6161), (14, 6203), (Start: 16 @6227 has 51 MA's), (26, 6320), (40, 6470), (41, 6515), (Start: 44 @6524 has 1 MA's), (49, 6587), (50, 6590), (56, 6662), (60, 6773), (66, 6830), (70, 6875), (73, 6986), (75, 6998), (76, 7010), (80, 7049), (83, 7100), (95, 7184), (104, 7259), (105, 7277), (116, 7367), (119, 7400), (123, 7442), (129, 7508), (134, 7553), (135, 7565), (137, 7598),

Gene: BabyDotz_19 Start: 6678, Stop: 8189, Start Num: 16

Candidate Starts for BabyDotz_19:

(3, 6339), (12, 6585), (13, 6612), (14, 6654), (Start: 16 @6678 has 51 MA's), (26, 6771), (40, 6921), (Start: 44 @6975 has 1 MA's), (48, 7026), (49, 7038), (50, 7041), (56, 7113), (60, 7224), (66, 7281), (70, 7326), (73, 7437), (75, 7449), (76, 7461), (80, 7500), (83, 7551), (104, 7710), (105, 7728), (116, 7818), (119, 7851), (123, 7893), (129, 7959), (134, 8004), (135, 8016), (137, 8049),

Gene: BaconCheese_22 Start: 7375, Stop: 8886, Start Num: 16

Candidate Starts for BaconCheese_22:

(3, 7036), (13, 7309), (14, 7351), (Start: 16 @7375 has 51 MA's), (26, 7468), (40, 7618), (41, 7663), (Start: 44 @7672 has 1 MA's), (49, 7735), (50, 7738), (56, 7810), (60, 7921), (66, 7978), (70, 8023), (73, 8134), (75, 8146), (76, 8158), (80, 8197), (83, 8248), (104, 8407), (105, 8425), (116, 8515), (119, 8548), (123, 8590), (129, 8656), (134, 8701), (135, 8713), (137, 8746),

Gene: Beagle_21 Start: 7242, Stop: 8873, Start Num: 20

Candidate Starts for Beagle_21:

(Start: 20 @7242 has 18 MA's), (31, 7389), (49, 7590), (52, 7620), (57, 7713), (62, 7845), (71, 7917), (87, 8100), (90, 8130), (94, 8151), (100, 8220), (101, 8223), (102, 8226), (115, 8340), (116, 8343), (117, 8370), (118, 8373), (122, 8412), (124, 8421), (125, 8442), (129, 8487), (134, 8526), (136, 8547), (137, 8568), (146, 8631), (150, 8649), (167, 8769), (171, 8829), (174, 8859),

Gene: BetaFish_20 Start: 7445, Stop: 9076, Start Num: 20

Candidate Starts for BetaFish_20:

(Start: 20 @7445 has 18 MA's), (31, 7592), (49, 7793), (52, 7823), (57, 7916), (62, 8048), (71, 8120), (87, 8303), (90, 8333), (94, 8354), (100, 8423), (101, 8426), (102, 8429), (115, 8543), (116, 8546), (117, 8573), (118, 8576), (122, 8615), (124, 8624), (125, 8645), (129, 8690), (134, 8729), (136, 8750), (137, 8771), (146, 8834), (150, 8852), (167, 8972), (171, 9032), (174, 9062),

Gene: BirdInFrench_19 Start: 5601, Stop: 7064, Start Num: 16

Candidate Starts for BirdInFrench_19:

(Start: 16 @5601 has 51 MA's), (24, 5685), (35, 5814), (40, 5844), (45, 5919), (49, 5961), (60, 6147), (75, 6300), (76, 6312), (85, 6417), (101, 6549), (110, 6627), (116, 6672), (123, 6762), (128, 6822), (135, 6885), (138, 6930), (141, 6954), (145, 6978),

Gene: Blab_17 Start: 6003, Stop: 7514, Start Num: 16

Candidate Starts for Blab_17:

(3, 5664), (5, 5691), (7, 5715), (13, 5937), (14, 5979), (Start: 16 @6003 has 51 MA's), (26, 6096), (40, 6246), (Start: 44 @6300 has 1 MA's), (49, 6363), (50, 6366), (56, 6438), (60, 6549), (66, 6606), (70, 6651), (73, 6762), (75, 6774), (76, 6786), (80, 6825), (83, 6876), (104, 7035), (116, 7143), (119, 7176), (123, 7218), (129, 7284), (134, 7329), (135, 7341), (137, 7374),

Gene: Boise_11 Start: 4548, Stop: 6038, Start Num: 21

Candidate Starts for Boise_11:

(Start: 19 @4536 has 1 MA's), (21, 4548), (33, 4698), (39, 4764), (40, 4767), (49, 4884), (50, 4887), (60, 5082), (64, 5118), (68, 5157), (82, 5328), (87, 5379), (90, 5400), (94, 5421), (97, 5436), (105, 5523), (111, 5571), (117, 5640), (123, 5691), (124, 5694), (131, 5775), (134, 5820), (137, 5862), (154, 5982), (156, 6000),

Gene: BruhMoment_16 Start: 6782, Stop: 8248, Start Num: 44

Candidate Starts for BruhMoment_16:

(Start: 20 @6500 has 18 MA's), (Start: 44 @6782 has 1 MA's), (48, 6833), (49, 6845), (62, 7103), (63, 7106), (65, 7121), (68, 7139), (71, 7175), (77, 7235), (80, 7268), (84, 7322), (89, 7391), (94, 7445), (98, 7466), (101, 7517), (102, 7520), (114, 7631), (115, 7634), (116, 7637), (117, 7664), (125, 7736), (134, 7820), (137, 7862), (138, 7874), (139, 7883), (146, 7925), (155, 7991), (164, 8063), (174, 8186), (177, 8240),

Gene: CandC_18 Start: 5287, Stop: 6750, Start Num: 16

Candidate Starts for CandC_18:

(13, 5227), (Start: 16 @5287 has 51 MA's), (24, 5371), (35, 5500), (40, 5530), (45, 5605), (49, 5647), (60, 5833), (75, 5986), (76, 5998), (106, 6280), (110, 6313), (113, 6328), (116, 6358), (123, 6448), (128, 6508), (135, 6571), (138, 6616),

Gene: Casend_21 Start: 7002, Stop: 8513, Start Num: 16

Candidate Starts for Casend_21:

(3, 6663), (7, 6714), (13, 6936), (14, 6978), (Start: 16 @7002 has 51 MA's), (26, 7095), (40, 7245), (Start: 44 @7299 has 1 MA's), (49, 7362), (50, 7365), (56, 7437), (60, 7548), (66, 7605), (70, 7650), (73, 7761), (75, 7773), (76, 7785), (80, 7824), (83, 7875), (104, 8034), (105, 8052), (116, 8142), (119, 8175), (123, 8217), (129, 8283), (134, 8328), (135, 8340), (137, 8373),

Gene: DogYard_20 Start: 7312, Stop: 8943, Start Num: 20

Candidate Starts for DogYard_20:

(Start: 20 @7312 has 18 MA's), (31, 7459), (49, 7660), (52, 7690), (57, 7783), (62, 7915), (71, 7987), (87, 8170), (90, 8200), (94, 8221), (100, 8290), (101, 8293), (102, 8296), (115, 8410), (116, 8413), (117, 8440), (118, 8443), (122, 8482), (124, 8491), (125, 8512), (129, 8557), (134, 8596), (136, 8617), (137, 8638), (146, 8701), (150, 8719), (167, 8839), (171, 8899), (174, 8929),

Gene: DonaldDuck_19 Start: 6348, Stop: 7859, Start Num: 16

Candidate Starts for DonaldDuck_19:

(3, 6009), (7, 6060), (13, 6282), (14, 6324), (Start: 16 @6348 has 51 MA's), (26, 6441), (40, 6591), (Start: 44 @6645 has 1 MA's), (49, 6708), (50, 6711), (56, 6783), (60, 6894), (66, 6951), (70, 6996), (73, 7107), (75, 7119), (76, 7131), (80, 7170), (83, 7221), (104, 7380), (105, 7398), (116, 7488), (119, 7521), (123, 7563), (129, 7629), (134, 7674), (135, 7686), (137, 7719),

Gene: EverythinBagel_19 Start: 6749, Stop: 8260, Start Num: 16

Candidate Starts for EverythinBagel_19:

(3, 6410), (5, 6437), (7, 6461), (13, 6683), (14, 6725), (Start: 16 @6749 has 51 MA's), (26, 6842), (40, 6992), (41, 7037), (Start: 44 @7046 has 1 MA's), (49, 7109), (50, 7112), (56, 7184), (60, 7295), (66, 7352), (70, 7397), (73, 7508), (75, 7520), (76, 7532), (80, 7571), (83, 7622), (104, 7781), (105, 7799), (116, 7889), (119, 7922), (123, 7964), (129, 8030), (134, 8075), (135, 8087), (137, 8120),

Gene: Fizzles_20 Start: 6291, Stop: 7814, Start Num: 16

Candidate Starts for Fizzles_20:

(Start: 16 @6291 has 51 MA's), (18, 6303), (33, 6480), (36, 6525), (40, 6549), (Start: 44 @6603 has 1 MA's), (49, 6666), (50, 6669), (56, 6741), (60, 6852), (66, 6909), (70, 6954), (75, 7077), (76, 7089), (80,

7128), (83, 7179), (86, 7206), (93, 7239), (94, 7254), (109, 7386), (116, 7443), (134, 7629), (135, 7641),

Gene: Forrestell_17 Start: 5956, Stop: 7587, Start Num: 20

Candidate Starts for Forrestell_17:

(Start: 20 @5956 has 18 MA's), (31, 6103), (49, 6304), (52, 6334), (57, 6427), (62, 6559), (71, 6631), (87, 6814), (90, 6844), (94, 6865), (100, 6934), (102, 6940), (115, 7054), (116, 7057), (117, 7084), (118, 7087), (122, 7126), (124, 7135), (125, 7156), (129, 7201), (134, 7240), (136, 7261), (146, 7345), (150, 7363), (167, 7483), (171, 7543), (174, 7573),

Gene: FrankDeliGuy_17 Start: 6207, Stop: 7718, Start Num: 16

Candidate Starts for FrankDeliGuy_17:

(3, 5868), (7, 5919), (13, 6141), (14, 6183), (Start: 16 @6207 has 51 MA's), (26, 6300), (40, 6450), (Start: 44 @6504 has 1 MA's), (49, 6567), (50, 6570), (56, 6642), (60, 6753), (66, 6810), (70, 6855), (73, 6966), (75, 6978), (76, 6990), (80, 7029), (83, 7080), (104, 7239), (105, 7257), (116, 7347), (119, 7380), (123, 7422), (129, 7488), (134, 7533), (135, 7545), (137, 7578),

Gene: Fransoyer_21 Start: 6468, Stop: 8003, Start Num: 16

Candidate Starts for Fransoyer_21:

(Start: 16 @6468 has 51 MA's), (24, 6552), (34, 6645), (37, 6699), (40, 6711), (43, 6762), (Start: 44 @6765 has 1 MA's), (49, 6828), (56, 6903), (60, 7014), (66, 7071), (73, 7227), (75, 7239), (76, 7251), (80, 7290), (83, 7341), (94, 7416), (96, 7428), (98, 7437), (112, 7572), (116, 7608), (119, 7641), (123, 7698), (134, 7809), (135, 7821), (138, 7866), (144, 7908),

Gene: Fregley_20 Start: 5825, Stop: 7288, Start Num: 16

Candidate Starts for Fregley_20:

(13, 5765), (Start: 16 @5825 has 51 MA's), (24, 5909), (35, 6038), (40, 6068), (45, 6143), (49, 6185), (60, 6371), (75, 6524), (76, 6536), (106, 6818), (110, 6851), (113, 6866), (116, 6896), (123, 6986), (128, 7046), (135, 7109), (138, 7154),

Gene: Gazebo_19 Start: 6569, Stop: 8080, Start Num: 16

Candidate Starts for Gazebo_19:

(3, 6230), (5, 6257), (7, 6281), (13, 6503), (14, 6545), (Start: 16 @6569 has 51 MA's), (26, 6662), (40, 6812), (Start: 44 @6866 has 1 MA's), (49, 6929), (50, 6932), (56, 7004), (60, 7115), (66, 7172), (70, 7217), (73, 7328), (75, 7340), (76, 7352), (80, 7391), (83, 7442), (104, 7601), (105, 7619), (116, 7709), (119, 7742), (123, 7784), (129, 7850), (134, 7895), (135, 7907), (137, 7940),

Gene: Grassboy_21 Start: 7024, Stop: 8535, Start Num: 16

Candidate Starts for Grassboy_21:

(3, 6685), (7, 6736), (12, 6931), (13, 6958), (14, 7000), (Start: 16 @7024 has 51 MA's), (40, 7267), (Start: 44 @7321 has 1 MA's), (49, 7384), (56, 7459), (60, 7570), (66, 7627), (70, 7672), (73, 7783), (75, 7795), (76, 7807), (80, 7846), (83, 7897), (104, 8056), (105, 8074), (116, 8164), (119, 8197), (123, 8239), (129, 8305), (134, 8350), (135, 8362), (137, 8395),

Gene: Hive_19 Start: 7326, Stop: 8957, Start Num: 20

Candidate Starts for Hive_19:

(Start: 20 @7326 has 18 MA's), (27, 7407), (31, 7473), (49, 7674), (52, 7704), (57, 7797), (62, 7929), (71, 8001), (87, 8184), (90, 8214), (94, 8235), (101, 8307), (102, 8310), (115, 8424), (116, 8427), (117, 8454), (118, 8457), (122, 8496), (124, 8505), (125, 8526), (129, 8571), (134, 8610), (136, 8631), (137, 8652), (146, 8715), (150, 8733), (167, 8853), (171, 8913), (174, 8943),

Gene: Hyperion_18 Start: 6272, Stop: 7783, Start Num: 16

Candidate Starts for Hyperion_18:

(3, 5933), (6, 5975), (13, 6206), (14, 6248), (Start: 16 @6272 has 51 MA's), (40, 6515), (Start: 44 @6569 has 1 MA's), (49, 6632), (56, 6707), (60, 6818), (66, 6875), (70, 6920), (73, 7031), (75, 7043), (76, 7055), (80, 7094), (83, 7145), (104, 7304), (105, 7322), (116, 7412), (119, 7445), (123, 7487), (129, 7553), (134, 7598), (135, 7610), (137, 7643),

Gene: Jehoshaphat_22 Start: 7267, Stop: 8778, Start Num: 16

Candidate Starts for Jehoshaphat_22:

(3, 6928), (7, 6979), (13, 7201), (14, 7243), (Start: 16 @7267 has 51 MA's), (26, 7360), (40, 7510), (Start: 44 @7564 has 1 MA's), (49, 7627), (50, 7630), (56, 7702), (60, 7813), (66, 7870), (70, 7915), (73, 8026), (75, 8038), (76, 8050), (80, 8089), (83, 8140), (104, 8299), (105, 8317), (116, 8407), (119, 8440), (123, 8482), (129, 8548), (134, 8593), (135, 8605), (137, 8638),

Gene: Judebell_22 Start: 6808, Stop: 8319, Start Num: 16

Candidate Starts for Judebell_22:

(3, 6469), (5, 6496), (12, 6715), (13, 6742), (14, 6784), (Start: 16 @6808 has 51 MA's), (40, 7051), (Start: 44 @7105 has 1 MA's), (49, 7168), (50, 7171), (56, 7243), (60, 7354), (66, 7411), (70, 7456), (73, 7567), (75, 7579), (76, 7591), (80, 7630), (83, 7681), (104, 7840), (105, 7858), (116, 7948), (119, 7981), (123, 8023), (129, 8089), (134, 8134), (135, 8146), (137, 8179),

Gene: Kelcole_18 Start: 5678, Stop: 7141, Start Num: 16

Candidate Starts for Kelcole_18:

(13, 5618), (Start: 16 @5678 has 51 MA's), (24, 5762), (35, 5891), (40, 5921), (45, 5996), (49, 6038), (60, 6224), (75, 6377), (76, 6389), (106, 6671), (110, 6704), (113, 6719), (116, 6749), (123, 6839), (128, 6899), (135, 6962), (138, 7007),

Gene: KillerQueen_20 Start: 5494, Stop: 6957, Start Num: 16

Candidate Starts for KillerQueen_20:

(13, 5434), (Start: 16 @5494 has 51 MA's), (24, 5578), (35, 5707), (40, 5737), (45, 5812), (49, 5854), (60, 6040), (75, 6193), (76, 6205), (106, 6487), (110, 6520), (113, 6535), (116, 6565), (123, 6655), (128, 6715), (135, 6778), (138, 6823),

Gene: Kithara_20 Start: 7908, Stop: 9383, Start Num: 17

Candidate Starts for Kithara_20:

(10, 7761), (15, 7887), (Start: 17 @7908 has 1 MA's), (23, 7962), (28, 8013), (29, 8034), (48, 8259), (49, 8271), (57, 8355), (58, 8433), (61, 8475), (63, 8490), (71, 8565), (75, 8607), (81, 8685), (84, 8712), (104, 8868), (117, 9003), (123, 9057), (129, 9132), (132, 9159), (134, 9177), (135, 9189), (138, 9231), (142, 9267), (153, 9336), (154, 9339),

Gene: Kubulix_21 Start: 7441, Stop: 9072, Start Num: 20

Candidate Starts for Kubulix_21:

(Start: 20 @7441 has 18 MA's), (31, 7588), (49, 7789), (52, 7819), (57, 7912), (62, 8044), (71, 8116), (87, 8299), (90, 8329), (94, 8350), (100, 8419), (101, 8422), (102, 8425), (115, 8539), (116, 8542), (117, 8569), (118, 8572), (122, 8611), (124, 8620), (125, 8641), (129, 8686), (134, 8725), (136, 8746), (137, 8767), (146, 8830), (150, 8848), (167, 8968), (171, 9028), (174, 9058),

Gene: Kyva_22 Start: 7059, Stop: 8570, Start Num: 16

Candidate Starts for Kyva_22:

(3, 6720), (7, 6771), (12, 6966), (13, 6993), (14, 7035), (Start: 16 @7059 has 51 MA's), (40, 7302), (Start: 44 @7356 has 1 MA's), (49, 7419), (56, 7494), (60, 7605), (66, 7662), (70, 7707), (73, 7818), (75, 7830), (76, 7842), (80, 7881), (83, 7932), (104, 8091), (105, 8109), (116, 8199), (119, 8232), (123, 8274), (129, 8340), (134, 8385), (135, 8397), (137, 8430),

Gene: Llemily_19 Start: 6043, Stop: 7554, Start Num: 16

Candidate Starts for Llemily_19:

(3, 5704), (5, 5731), (7, 5755), (13, 5977), (14, 6019), (Start: 16 @6043 has 51 MA's), (40, 6286), (Start: 44 @6340 has 1 MA's), (49, 6403), (50, 6406), (56, 6478), (60, 6589), (66, 6646), (70, 6691), (73, 6802), (75, 6814), (76, 6826), (80, 6865), (83, 6916), (104, 7075), (105, 7093), (116, 7183), (119, 7216), (123, 7258), (129, 7324), (134, 7369), (135, 7381), (137, 7414),

Gene: Lonelysoil_19 Start: 6288, Stop: 7799, Start Num: 16

Candidate Starts for Lonelysoil_19:

(3, 5949), (13, 6222), (14, 6264), (Start: 16 @6288 has 51 MA's), (40, 6531), (Start: 44 @6585 has 1 MA's), (49, 6648), (56, 6723), (60, 6834), (66, 6891), (70, 6936), (73, 7047), (75, 7059), (76, 7071), (80, 7110), (83, 7161), (104, 7320), (105, 7338), (116, 7428), (119, 7461), (123, 7503), (129, 7569), (134, 7614), (135, 7626), (137, 7659),

Gene: Marcie_24 Start: 6383, Stop: 7846, Start Num: 16

Candidate Starts for Marcie_24:

(13, 6323), (Start: 16 @6383 has 51 MA's), (24, 6467), (35, 6596), (40, 6626), (45, 6701), (49, 6743), (60, 6929), (61, 6947), (75, 7082), (76, 7094), (110, 7409), (113, 7424), (116, 7454), (123, 7544), (128, 7604), (135, 7667), (138, 7712), (145, 7760),

Gene: Mashley_17 Start: 6083, Stop: 7594, Start Num: 16

Candidate Starts for Mashley_17:

(3, 5744), (13, 6017), (14, 6059), (Start: 16 @6083 has 51 MA's), (40, 6326), (Start: 44 @6380 has 1 MA's), (49, 6443), (56, 6518), (60, 6629), (66, 6686), (70, 6731), (73, 6842), (75, 6854), (76, 6866), (80, 6905), (83, 6956), (104, 7115), (105, 7133), (116, 7223), (119, 7256), (123, 7298), (129, 7364), (134, 7409), (135, 7421), (137, 7454),

Gene: MellowYellow_17 Start: 5986, Stop: 7617, Start Num: 20

Candidate Starts for MellowYellow_17:

(Start: 20 @5986 has 18 MA's), (31, 6133), (49, 6334), (52, 6364), (57, 6457), (62, 6589), (71, 6661), (87, 6844), (90, 6874), (94, 6895), (100, 6964), (102, 6970), (115, 7084), (116, 7087), (117, 7114), (118, 7117), (122, 7156), (124, 7165), (125, 7186), (129, 7231), (134, 7270), (136, 7291), (137, 7312), (146, 7375), (150, 7393), (167, 7513), (171, 7573), (174, 7603),

Gene: Mentos_24 Start: 7622, Stop: 9133, Start Num: 16

Candidate Starts for Mentos_24:

(3, 7283), (7, 7334), (13, 7556), (14, 7598), (Start: 16 @7622 has 51 MA's), (40, 7865), (Start: 44 @7919 has 1 MA's), (49, 7982), (56, 8057), (60, 8168), (66, 8225), (70, 8270), (73, 8381), (75, 8393), (76, 8405), (80, 8444), (83, 8495), (104, 8654), (105, 8672), (116, 8762), (119, 8795), (123, 8837), (129, 8903), (134, 8948), (135, 8960), (137, 8993),

Gene: Mila11_22 Start: 7158, Stop: 8669, Start Num: 16

Candidate Starts for Mila11_22:

(3, 6819), (13, 7092), (14, 7134), (Start: 16 @7158 has 51 MA's), (26, 7251), (40, 7401), (41, 7446), (Start: 44 @7455 has 1 MA's), (49, 7518), (50, 7521), (56, 7593), (60, 7704), (66, 7761), (70, 7806), (73, 7917), (75, 7929), (76, 7941), (80, 7980), (83, 8031), (104, 8190), (105, 8208), (116, 8298), (119, 8331), (123, 8373), (129, 8439), (134, 8484), (135, 8496), (137, 8529),

Gene: MorillMayhem_19 Start: 6091, Stop: 7602, Start Num: 16

Candidate Starts for MorillMayhem_19:

(3, 5752), (13, 6025), (14, 6067), (Start: 16 @6091 has 51 MA's), (26, 6184), (40, 6334), (41, 6379), (Start: 44 @6388 has 1 MA's), (49, 6451), (50, 6454), (56, 6526), (60, 6637), (66, 6694), (70, 6739), (73, 6850), (75, 6862), (76, 6874), (80, 6913), (83, 6964), (104, 7123), (105, 7141), (116, 7231), (119, 7264), (123, 7306), (129, 7372), (134, 7417), (135, 7429), (137, 7462),

Gene: Namago_20 Start: 6103, Stop: 7614, Start Num: 16

Candidate Starts for Namago_20:

(3, 5764), (5, 5791), (13, 6037), (14, 6079), (Start: 16 @6103 has 51 MA's), (40, 6346), (Start: 44 @6400 has 1 MA's), (48, 6451), (49, 6463), (56, 6538), (60, 6649), (66, 6706), (70, 6751), (73, 6862), (75, 6874), (76, 6886), (80, 6925), (83, 6976), (104, 7135), (105, 7153), (116, 7243), (119, 7276), (123, 7318), (129, 7384), (134, 7429), (135, 7441), (137, 7474),

Gene: Nikan_16 Start: 6441, Stop: 8090, Start Num: 20

Candidate Starts for Nikan_16:

(Start: 20 @6441 has 18 MA's), (31, 6588), (49, 6789), (52, 6819), (62, 7044), (71, 7116), (75, 7158), (87, 7299), (90, 7329), (94, 7350), (100, 7419), (101, 7422), (102, 7425), (115, 7539), (116, 7542), (117, 7569), (118, 7572), (122, 7611), (124, 7620), (125, 7641), (129, 7686), (134, 7725), (136, 7746), (137, 7767), (138, 7779), (149, 7854), (167, 7986), (172, 8049), (174, 8076),

Gene: Nike_20 Start: 7009, Stop: 8520, Start Num: 16

Candidate Starts for Nike_20:

(3, 6670), (5, 6697), (11, 6913), (12, 6916), (13, 6943), (14, 6985), (Start: 16 @7009 has 51 MA's), (26, 7102), (40, 7252), (Start: 44 @7306 has 1 MA's), (49, 7369), (56, 7444), (60, 7555), (66, 7612), (70, 7657), (73, 7768), (75, 7780), (76, 7792), (80, 7831), (83, 7882), (104, 8041), (105, 8059), (116, 8149), (119, 8182), (123, 8224), (129, 8290), (134, 8335), (135, 8347), (137, 8380),

Gene: NyleyClemson_16 Start: 5928, Stop: 7559, Start Num: 20

Candidate Starts for NyleyClemson_16:

(Start: 20 @5928 has 18 MA's), (31, 6075), (49, 6276), (52, 6306), (57, 6399), (62, 6531), (71, 6603), (87, 6786), (90, 6816), (94, 6837), (100, 6906), (102, 6912), (115, 7026), (116, 7029), (117, 7056), (118, 7059), (122, 7098), (124, 7107), (125, 7128), (129, 7173), (134, 7212), (136, 7233), (137, 7254), (146, 7317), (150, 7335), (167, 7455), (171, 7515), (174, 7545),

Gene: Odyssey395_22 Start: 7443, Stop: 9074, Start Num: 20

Candidate Starts for Odyssey395_22:

(Start: 20 @7443 has 18 MA's), (31, 7590), (49, 7791), (52, 7821), (57, 7914), (62, 8046), (71, 8118), (87, 8301), (90, 8331), (94, 8352), (100, 8421), (101, 8424), (102, 8427), (115, 8541), (116, 8544), (117, 8571), (118, 8574), (122, 8613), (124, 8622), (125, 8643), (129, 8688), (134, 8727), (136, 8748), (137, 8769), (146, 8832), (150, 8850), (167, 8970), (171, 9030), (174, 9060),

Gene: Ollypop_18 Start: 6406, Stop: 8055, Start Num: 20

Candidate Starts for Ollypop_18:

(Start: 20 @6406 has 18 MA's), (31, 6553), (41, 6682), (49, 6754), (52, 6784), (62, 7009), (71, 7081), (75, 7123), (87, 7264), (90, 7294), (94, 7315), (100, 7384), (101, 7387), (102, 7390), (105, 7417), (115, 7504), (117, 7534), (118, 7537), (122, 7576), (124, 7585), (125, 7606), (127, 7627), (129, 7651), (134, 7690), (136, 7711), (137, 7732), (138, 7744), (147, 7810), (149, 7819), (167, 7951), (171, 8011), (172, 8014), (174, 8041),

Gene: OneinaGillian_19 Start: 5360, Stop: 6823, Start Num: 16

Candidate Starts for OneinaGillian_19:

(13, 5300), (Start: 16 @5360 has 51 MA's), (24, 5444), (35, 5573), (40, 5603), (45, 5678), (49, 5720), (60, 5906), (75, 6059), (76, 6071), (106, 6353), (110, 6386), (113, 6401), (116, 6431), (123, 6521), (128, 6581), (135, 6644), (138, 6689),

Gene: OnionKnight_2 Start: 417, Stop: 1766, Start Num: 25

Candidate Starts for OnionKnight_2:

(8, 111), (9, 138), (Start: 25 @417 has 1 MA's), (30, 456), (38, 585), (41, 636), (42, 639), (47, 693), (51, 726), (59, 909), (64, 963), (72, 1032), (78, 1107), (92, 1248), (94, 1269), (99, 1308), (108, 1407), (116, 1473), (121, 1536), (126, 1590), (138, 1707), (140, 1728),

Gene: Pepe25_18 Start: 5618, Stop: 7081, Start Num: 16

Candidate Starts for Pepe25_18:

(Start: 16 @5618 has 51 MA's), (24, 5702), (35, 5831), (40, 5861), (45, 5936), (49, 5978), (60, 6164), (75, 6317), (76, 6329), (85, 6434), (101, 6566), (110, 6644), (116, 6689), (123, 6779), (128, 6839), (135, 6902), (138, 6947), (145, 6995),

Gene: Phabia_20 Start: 6461, Stop: 7972, Start Num: 16

Candidate Starts for Phabia_20:

(3, 6122), (5, 6149), (7, 6173), (12, 6368), (13, 6395), (14, 6437), (Start: 16 @6461 has 51 MA's), (40, 6704), (Start: 44 @6758 has 1 MA's), (48, 6809), (49, 6821), (56, 6896), (60, 7007), (66, 7064), (70, 7109), (73, 7220), (75, 7232), (76, 7244), (80, 7283), (83, 7334), (104, 7493), (105, 7511), (116, 7601), (119, 7634), (123, 7676), (129, 7742), (134, 7787), (135, 7799), (137, 7832),

Gene: Phinky_26 Start: 7321, Stop: 8835, Start Num: 16

Candidate Starts for Phinky_26:

(Start: 16 @7321 has 51 MA's), (34, 7498), (40, 7564), (43, 7615), (Start: 44 @7618 has 1 MA's), (49, 7681), (56, 7756), (60, 7867), (66, 7924), (70, 7969), (73, 8080), (74, 8086), (75, 8092), (76, 8104), (80, 8143), (83, 8194), (94, 8269), (107, 8392), (116, 8461), (123, 8536), (134, 8647), (135, 8659),

Gene: PhuzzTulsa_18 Start: 7230, Stop: 8861, Start Num: 20

Candidate Starts for PhuzzTulsa_18:

(Start: 20 @7230 has 18 MA's), (31, 7377), (49, 7578), (52, 7608), (55, 7635), (57, 7701), (62, 7833), (71, 7905), (87, 8088), (90, 8118), (94, 8139), (100, 8208), (101, 8211), (102, 8214), (115, 8328), (116, 8331), (117, 8358), (118, 8361), (122, 8400), (124, 8409), (125, 8430), (134, 8514), (136, 8535), (137, 8556), (146, 8619), (150, 8637), (167, 8757), (171, 8817), (174, 8847),

Gene: Pointis_20 Start: 7441, Stop: 9072, Start Num: 20

Candidate Starts for Pointis_20:

(Start: 20 @7441 has 18 MA's), (31, 7588), (49, 7789), (52, 7819), (57, 7912), (62, 8044), (71, 8116), (87, 8299), (90, 8329), (94, 8350), (100, 8419), (101, 8422), (102, 8425), (115, 8539), (116, 8542), (117, 8569), (118, 8572), (122, 8611), (124, 8620), (125, 8641), (129, 8686), (134, 8725), (136, 8746), (137, 8767), (146, 8830), (150, 8848), (167, 8968), (171, 9028), (174, 9058),

Gene: Popstraw_19 Start: 7230, Stop: 8861, Start Num: 20

Candidate Starts for Popstraw_19:

(Start: 20 @7230 has 18 MA's), (31, 7377), (49, 7578), (52, 7608), (55, 7635), (57, 7701), (62, 7833), (71, 7905), (87, 8088), (90, 8118), (94, 8139), (100, 8208), (101, 8211), (102, 8214), (115, 8328), (116, 8331), (117, 8358), (118, 8361), (122, 8400), (124, 8409), (129, 8475), (134, 8514), (136, 8535), (137, 8556), (146, 8619), (150, 8637), (167, 8757), (171, 8817), (174, 8847),

Gene: Pureglobe5_22 Start: 7457, Stop: 9088, Start Num: 20

Candidate Starts for Pureglobe5_22:

(Start: 20 @7457 has 18 MA's), (31, 7604), (49, 7805), (52, 7835), (57, 7928), (62, 8060), (71, 8132), (87, 8315), (90, 8345), (94, 8366), (100, 8435), (101, 8438), (102, 8441), (115, 8555), (116, 8558), (117, 8585), (118, 8588), (122, 8627), (124, 8636), (125, 8657), (129, 8702), (134, 8741), (136, 8762), (137, 8783), (146, 8846), (150, 8864), (167, 8984), (171, 9044), (174, 9074),

Gene: Quammi_18 Start: 6032, Stop: 7543, Start Num: 16

Candidate Starts for Quammi_18:

(3, 5693), (5, 5720), (7, 5744), (13, 5966), (14, 6008), (Start: 16 @6032 has 51 MA's), (40, 6275), (Start: 44 @6329 has 1 MA's), (49, 6392), (50, 6395), (56, 6467), (60, 6578), (66, 6635), (70, 6680), (73, 6791), (75, 6803), (76, 6815), (80, 6854), (83, 6905), (104, 7064), (105, 7082), (116, 7172), (119, 7205), (123, 7247), (129, 7313), (134, 7358), (135, 7370), (137, 7403),

Gene: RIPWilbur_18 Start: 6593, Stop: 8224, Start Num: 20

Candidate Starts for RIPWilbur_18:

(Start: 20 @6593 has 18 MA's), (31, 6740), (49, 6941), (52, 6971), (57, 7064), (61, 7184), (62, 7196), (71, 7268), (87, 7451), (90, 7481), (94, 7502), (100, 7571), (101, 7574), (102, 7577), (115, 7691), (116, 7694), (117, 7721), (118, 7724), (122, 7763), (124, 7772), (125, 7793), (129, 7838), (134, 7877), (136, 7898), (137, 7919), (146, 7982), (150, 8000), (167, 8120), (171, 8180), (174, 8210),

Gene: Ranunculus_15 Start: 6341, Stop: 8053, Start Num: 20

Candidate Starts for Ranunculus_15:

(Start: 20 @6341 has 18 MA's), (31, 6485), (37, 6557), (49, 6686), (52, 6716), (53, 6734), (62, 6941), (71, 7013), (79, 7094), (87, 7196), (101, 7331), (116, 7451), (117, 7478), (118, 7481), (120, 7502), (122, 7520), (124, 7529), (127, 7571), (129, 7595), (133, 7622), (134, 7634), (135, 7646), (136, 7655), (137, 7676), (138, 7688), (157, 7826), (161, 7868), (163, 7877), (166, 7901), (168, 7922), (171, 7970), (174, 8000),

Gene: RazzB_16 Start: 5756, Stop: 7387, Start Num: 20

Candidate Starts for RazzB_16:

(Start: 20 @5756 has 18 MA's), (31, 5903), (49, 6104), (52, 6134), (57, 6227), (62, 6359), (71, 6431), (87, 6614), (90, 6644), (94, 6665), (100, 6734), (101, 6737), (102, 6740), (115, 6854), (116, 6857), (117, 6884), (118, 6887), (122, 6926), (124, 6935), (125, 6956), (129, 7001), (134, 7040), (136, 7061), (137, 7082), (146, 7145), (150, 7163), (167, 7283), (171, 7343), (174, 7373),

Gene: Ren19_14 Start: 6441, Stop: 8090, Start Num: 20

Candidate Starts for Ren19_14:

(Start: 20 @6441 has 18 MA's), (31, 6588), (49, 6789), (52, 6819), (62, 7044), (71, 7116), (75, 7158), (87, 7299), (90, 7329), (94, 7350), (100, 7419), (101, 7422), (102, 7425), (115, 7539), (116, 7542), (117, 7569), (118, 7572), (122, 7611), (124, 7620), (125, 7641), (129, 7686), (134, 7725), (136, 7746), (137, 7767), (138, 7779), (149, 7854), (167, 7986), (169, 8007), (172, 8049), (174, 8076),

Gene: Rizwana_14 Start: 6254, Stop: 8020, Start Num: 20

Candidate Starts for Rizwana_14:

(Start: 20 @6254 has 18 MA's), (38, 6476), (Start: 44 @6536 has 1 MA's), (49, 6599), (52, 6629), (58, 6803), (62, 6857), (63, 6860), (71, 6929), (74, 6965), (77, 6989), (80, 7022), (84, 7076), (87, 7115), (89, 7145), (94, 7199), (95, 7208), (96, 7211), (97, 7214), (100, 7268), (116, 7391), (117, 7418), (125, 7490), (127, 7511), (134, 7574), (135, 7586), (152, 7733), (155, 7766), (158, 7799), (159, 7802), (170, 7916), (172, 7952), (173, 7955), (176, 8006),

Gene: RobinRose_20 Start: 5513, Stop: 6976, Start Num: 16

Candidate Starts for RobinRose_20:

(13, 5453), (Start: 16 @5513 has 51 MA's), (24, 5597), (35, 5726), (40, 5756), (45, 5831), (49, 5873), (60, 6059), (75, 6212), (76, 6224), (106, 6506), (110, 6539), (113, 6554), (116, 6584), (123, 6674), (128, 6734), (135, 6797), (138, 6842),

Gene: RomansRevenge_11 Start: 4536, Stop: 6038, Start Num: 19

Candidate Starts for RomansRevenge_11:

(Start: 19 @4536 has 1 MA's), (21, 4548), (33, 4698), (39, 4764), (40, 4767), (49, 4884), (50, 4887), (60, 5082), (64, 5118), (68, 5157), (82, 5328), (87, 5379), (90, 5400), (94, 5421), (97, 5436), (105, 5523), (111, 5571), (117, 5640), (123, 5691), (124, 5694), (131, 5775), (134, 5820), (137, 5862), (154,

5982), (156, 6000),

Gene: Romm_20 Start: 5513, Stop: 6976, Start Num: 16

Candidate Starts for Romm_20:

(13, 5453), (Start: 16 @5513 has 51 MA's), (24, 5597), (35, 5726), (40, 5756), (45, 5831), (49, 5873), (60, 6059), (75, 6212), (76, 6224), (106, 6506), (110, 6539), (113, 6554), (116, 6584), (123, 6674), (128, 6734), (135, 6797), (138, 6842),

Gene: Rowlf_16 Start: 5798, Stop: 7309, Start Num: 16

Candidate Starts for Rowlf_16:

(3, 5459), (5, 5486), (7, 5510), (13, 5732), (14, 5774), (Start: 16 @5798 has 51 MA's), (40, 6041), (Start: 44 @6095 has 1 MA's), (49, 6158), (50, 6161), (56, 6233), (60, 6344), (66, 6401), (70, 6446), (73, 6557), (75, 6569), (76, 6581), (80, 6620), (83, 6671), (104, 6830), (105, 6848), (116, 6938), (119, 6971), (123, 7013), (129, 7079), (134, 7124), (135, 7136), (137, 7169),

Gene: RubyRalph_21 Start: 6402, Stop: 7937, Start Num: 16

Candidate Starts for RubyRalph_21:

(Start: 16 @6402 has 51 MA's), (24, 6486), (34, 6579), (37, 6633), (40, 6645), (43, 6696), (Start: 44 @6699 has 1 MA's), (49, 6762), (56, 6837), (60, 6948), (66, 7005), (73, 7161), (75, 7173), (76, 7185), (80, 7224), (83, 7275), (94, 7350), (96, 7362), (98, 7371), (112, 7506), (116, 7542), (119, 7575), (123, 7632), (134, 7743), (135, 7755), (138, 7800), (144, 7842),

Gene: Rudy_18 Start: 6032, Stop: 7543, Start Num: 16

Candidate Starts for Rudy_18:

(3, 5693), (5, 5720), (7, 5744), (13, 5966), (14, 6008), (Start: 16 @6032 has 51 MA's), (40, 6275), (Start: 44 @6329 has 1 MA's), (49, 6392), (50, 6395), (56, 6467), (60, 6578), (66, 6635), (70, 6680), (73, 6791), (75, 6803), (76, 6815), (80, 6854), (83, 6905), (104, 7064), (105, 7082), (116, 7172), (119, 7205), (123, 7247), (129, 7313), (134, 7358), (135, 7370), (137, 7403),

Gene: SadLad_22 Start: 6859, Stop: 8394, Start Num: 16

Candidate Starts for SadLad_22:

(Start: 16 @6859 has 51 MA's), (24, 6943), (34, 7036), (37, 7090), (40, 7102), (43, 7153), (Start: 44 @7156 has 1 MA's), (49, 7219), (56, 7294), (60, 7405), (66, 7462), (75, 7630), (76, 7642), (80, 7681), (83, 7732), (94, 7807), (96, 7819), (116, 7999), (123, 8089), (134, 8200), (135, 8212), (138, 8257),

Gene: SallyK_21 Start: 7193, Stop: 8704, Start Num: 16

Candidate Starts for SallyK_21:

(3, 6854), (4, 6866), (5, 6881), (7, 6905), (12, 7100), (13, 7127), (14, 7169), (Start: 16 @7193 has 51 MA's), (40, 7436), (Start: 44 @7490 has 1 MA's), (49, 7553), (56, 7628), (60, 7739), (66, 7796), (70, 7841), (73, 7952), (75, 7964), (76, 7976), (80, 8015), (83, 8066), (104, 8225), (105, 8243), (116, 8333), (119, 8366), (123, 8408), (129, 8474), (134, 8519), (135, 8531), (137, 8564),

Gene: SilentRX_16 Start: 6460, Stop: 8172, Start Num: 20

Candidate Starts for SilentRX_16:

(Start: 20 @6460 has 18 MA's), (Start: 44 @6742 has 1 MA's), (49, 6805), (52, 6835), (53, 6853), (54, 6859), (55, 6862), (62, 7069), (63, 7072), (67, 7102), (68, 7105), (71, 7141), (77, 7201), (80, 7234), (88, 7345), (94, 7408), (116, 7600), (117, 7627), (118, 7630), (122, 7669), (124, 7678), (125, 7699), (131, 7759), (134, 7783), (135, 7795), (137, 7825), (148, 7906), (160, 8002), (162, 8017), (164, 8023), (170, 8074), (173, 8107), (174, 8131), (175, 8140), (176, 8158),

Gene: Sillytadpoles_19 Start: 6030, Stop: 7541, Start Num: 16

Candidate Starts for Sillytadpoles_19:

(3, 5691), (5, 5718), (7, 5742), (13, 5964), (14, 6006), (Start: 16 @6030 has 51 MA's), (40, 6273), (Start: 44 @6327 has 1 MA's), (49, 6390), (50, 6393), (56, 6465), (60, 6576), (66, 6633), (70, 6678), (73, 6789), (75, 6801), (76, 6813), (80, 6852), (83, 6903), (104, 7062), (105, 7080), (116, 7170), (119, 7203), (123, 7245), (129, 7311), (134, 7356), (135, 7368), (137, 7401),

Gene: SlySloth_22 Start: 6984, Stop: 8495, Start Num: 16

Candidate Starts for SlySloth_22:

(3, 6645), (5, 6672), (7, 6696), (13, 6918), (14, 6960), (Start: 16 @6984 has 51 MA's), (40, 7227), (Start: 44 @7281 has 1 MA's), (49, 7344), (50, 7347), (56, 7419), (60, 7530), (66, 7587), (70, 7632), (73, 7743), (75, 7755), (76, 7767), (80, 7806), (83, 7857), (104, 8016), (105, 8034), (116, 8124), (119, 8157), (123, 8199), (129, 8265), (134, 8310), (135, 8322), (137, 8355),

Gene: Squash_22 Start: 7064, Stop: 8575, Start Num: 16

Candidate Starts for Squash_22:

(3, 6725), (5, 6752), (11, 6968), (12, 6971), (13, 6998), (14, 7040), (Start: 16 @7064 has 51 MA's), (26, 7157), (40, 7307), (Start: 44 @7361 has 1 MA's), (49, 7424), (56, 7499), (60, 7610), (66, 7667), (70, 7712), (73, 7823), (75, 7835), (76, 7847), (80, 7886), (83, 7937), (104, 8096), (105, 8114), (116, 8204), (119, 8237), (123, 8279), (129, 8345), (134, 8390), (135, 8402), (137, 8435),

Gene: Statler_20 Start: 6569, Stop: 8080, Start Num: 16

Candidate Starts for Statler_20:

(3, 6230), (5, 6257), (7, 6281), (13, 6503), (14, 6545), (Start: 16 @6569 has 51 MA's), (26, 6662), (40, 6812), (Start: 44 @6866 has 1 MA's), (49, 6929), (50, 6932), (56, 7004), (60, 7115), (66, 7172), (70, 7217), (73, 7328), (75, 7340), (76, 7352), (80, 7391), (83, 7442), (104, 7601), (105, 7619), (116, 7709), (119, 7742), (123, 7784), (129, 7850), (134, 7895), (135, 7907), (137, 7940),

Gene: StrawberryJamm_22 Start: 6332, Stop: 7843, Start Num: 16

Candidate Starts for StrawberryJamm_22:

(3, 5993), (7, 6044), (13, 6266), (14, 6308), (Start: 16 @6332 has 51 MA's), (26, 6425), (40, 6575), (Start: 44 @6629 has 1 MA's), (49, 6692), (50, 6695), (56, 6767), (60, 6878), (66, 6935), (73, 7091), (75, 7103), (76, 7115), (80, 7154), (83, 7205), (104, 7364), (105, 7382), (116, 7472), (119, 7505), (123, 7547), (129, 7613), (134, 7658), (135, 7670), (137, 7703),

Gene: Sunfish_22 Start: 7434, Stop: 8969, Start Num: 20

Candidate Starts for Sunfish_22:

(Start: 20 @7434 has 18 MA's), (28, 7518), (38, 7653), (43, 7710), (46, 7740), (49, 7776), (52, 7806), (56, 7851), (60, 7962), (68, 8037), (74, 8109), (76, 8127), (77, 8133), (78, 8151), (80, 8166), (103, 8385), (105, 8406), (117, 8523), (130, 8667), (134, 8697), (137, 8739), (143, 8787), (154, 8862), (165, 8955),

Gene: Tank_15 Start: 6269, Stop: 8035, Start Num: 20

Candidate Starts for Tank_15:

(Start: 20 @6269 has 18 MA's), (Start: 44 @6551 has 1 MA's), (48, 6602), (49, 6614), (50, 6617), (62, 6872), (63, 6875), (67, 6905), (71, 6944), (74, 6980), (75, 6986), (80, 7037), (84, 7091), (87, 7130), (94, 7214), (96, 7226), (97, 7229), (100, 7283), (101, 7286), (105, 7316), (115, 7403), (116, 7406), (117, 7433), (125, 7505), (134, 7589), (135, 7601), (158, 7814), (159, 7817), (172, 7967), (173, 7970), (176, 8021),

Gene: Teehee_21 Start: 7267, Stop: 8778, Start Num: 16

Candidate Starts for Teehee_21:

(3, 6928), (7, 6979), (13, 7201), (14, 7243), (Start: 16 @7267 has 51 MA's), (26, 7360), (40, 7510), (Start: 44 @7564 has 1 MA's), (49, 7627), (50, 7630), (56, 7702), (60, 7813), (66, 7870), (70, 7915), (73, 8026), (75, 8038), (76, 8050), (80, 8089), (83, 8140), (104, 8299), (105, 8317), (116, 8407), (119,

8440), (123, 8482), (129, 8548), (134, 8593), (135, 8605), (137, 8638),

Gene: Tempo_19 Start: 5705, Stop: 7168, Start Num: 16

Candidate Starts for Tempo_19:

(13, 5645), (Start: 16 @5705 has 51 MA's), (24, 5789), (35, 5918), (40, 5948), (45, 6023), (49, 6065), (60, 6251), (75, 6404), (76, 6416), (106, 6698), (110, 6731), (113, 6746), (116, 6776), (123, 6866), (128, 6926), (135, 6989), (138, 7034),

Gene: Tissue_19 Start: 6401, Stop: 7912, Start Num: 16

Candidate Starts for Tissue_19:

(3, 6062), (5, 6089), (13, 6335), (14, 6377), (Start: 16 @6401 has 51 MA's), (40, 6644), (Start: 44 @6698 has 1 MA's), (48, 6749), (49, 6761), (56, 6836), (60, 6947), (66, 7004), (70, 7049), (73, 7160), (75, 7172), (76, 7184), (80, 7223), (83, 7274), (104, 7433), (105, 7451), (116, 7541), (119, 7574), (123, 7616), (129, 7682), (134, 7727), (135, 7739), (137, 7772),

Gene: Viceroy_19 Start: 6032, Stop: 7543, Start Num: 16

Candidate Starts for Viceroy_19:

(3, 5693), (5, 5720), (7, 5744), (13, 5966), (14, 6008), (Start: 16 @6032 has 51 MA's), (40, 6275), (Start: 44 @6329 has 1 MA's), (49, 6392), (50, 6395), (56, 6467), (60, 6578), (66, 6635), (70, 6680), (73, 6791), (75, 6803), (76, 6815), (80, 6854), (83, 6905), (104, 7064), (105, 7082), (116, 7172), (119, 7205), (123, 7247), (129, 7313), (134, 7358), (135, 7370), (137, 7403),

Gene: Wayne3_21 Start: 6997, Stop: 8508, Start Num: 16

Candidate Starts for Wayne3_21:

(3, 6658), (7, 6709), (13, 6931), (14, 6973), (Start: 16 @6997 has 51 MA's), (26, 7090), (40, 7240), (Start: 44 @7294 has 1 MA's), (49, 7357), (50, 7360), (56, 7432), (60, 7543), (66, 7600), (70, 7645), (73, 7756), (75, 7768), (76, 7780), (80, 7819), (83, 7870), (104, 8029), (105, 8047), (116, 8137), (119, 8170), (123, 8212), (129, 8278), (134, 8323), (135, 8335), (137, 8368),

Gene: WheelerS25_25 Start: 7780, Stop: 9291, Start Num: 16

Candidate Starts for WheelerS25_25:

(3, 7441), (5, 7468), (6, 7483), (13, 7714), (14, 7756), (Start: 16 @7780 has 51 MA's), (26, 7873), (32, 7948), (40, 8023), (Start: 44 @8077 has 1 MA's), (49, 8140), (56, 8215), (60, 8326), (66, 8383), (70, 8428), (73, 8539), (75, 8551), (76, 8563), (80, 8602), (83, 8653), (104, 8812), (105, 8830), (116, 8920), (119, 8953), (123, 8995), (129, 9061), (134, 9106), (135, 9118), (137, 9151),

Gene: Wheelie_19 Start: 6348, Stop: 7859, Start Num: 16

Candidate Starts for Wheelie_19:

(3, 6009), (7, 6060), (13, 6282), (14, 6324), (Start: 16 @6348 has 51 MA's), (26, 6441), (40, 6591), (Start: 44 @6645 has 1 MA's), (49, 6708), (50, 6711), (56, 6783), (60, 6894), (66, 6951), (70, 6996), (73, 7107), (75, 7119), (76, 7131), (80, 7170), (83, 7221), (104, 7380), (105, 7398), (116, 7488), (119, 7521), (123, 7563), (129, 7629), (134, 7674), (135, 7686), (137, 7719),

Gene: Wilca_19 Start: 5601, Stop: 7064, Start Num: 16

Candidate Starts for Wilca_19:

(Start: 16 @5601 has 51 MA's), (24, 5685), (35, 5814), (40, 5844), (45, 5919), (49, 5961), (60, 6147), (75, 6300), (76, 6312), (85, 6417), (101, 6549), (110, 6627), (116, 6672), (123, 6762), (128, 6822), (135, 6885), (138, 6930), (141, 6954), (145, 6978),

Gene: Wilde_15 Start: 6197, Stop: 7963, Start Num: 20

Candidate Starts for Wilde_15:

(Start: 20 @6197 has 18 MA's), (Start: 44 @6479 has 1 MA's), (48, 6530), (49, 6542), (50, 6545), (62, 6800), (63, 6803), (67, 6833), (68, 6836), (71, 6872), (74, 6908), (75, 6914), (80, 6965), (84, 7019), (87,

7058), (94, 7142), (96, 7154), (97, 7157), (100, 7211), (101, 7214), (105, 7244), (115, 7331), (116, 7334), (117, 7361), (125, 7433), (134, 7517), (135, 7529), (158, 7742), (159, 7745), (172, 7895), (173, 7898), (176, 7949),

Gene: Zagie_20 Start: 6535, Stop: 8046, Start Num: 16

Candidate Starts for Zagie_20:

(3, 6196), (5, 6223), (7, 6247), (13, 6469), (14, 6511), (Start: 16 @6535 has 51 MA's), (40, 6778), (Start: 44 @6832 has 1 MA's), (49, 6895), (50, 6898), (56, 6970), (60, 7081), (66, 7138), (70, 7183), (73, 7294), (75, 7306), (76, 7318), (80, 7357), (83, 7408), (104, 7567), (105, 7585), (116, 7675), (119, 7708), (123, 7750), (129, 7816), (134, 7861), (135, 7873), (137, 7906),

Gene: Zhafia_22 Start: 6773, Stop: 8284, Start Num: 16

Candidate Starts for Zhafia_22:

(3, 6434), (5, 6461), (13, 6707), (14, 6749), (Start: 16 @6773 has 51 MA's), (40, 7016), (Start: 44 @7070 has 1 MA's), (48, 7121), (49, 7133), (56, 7208), (60, 7319), (66, 7376), (70, 7421), (73, 7532), (75, 7544), (76, 7556), (80, 7595), (83, 7646), (104, 7805), (105, 7823), (116, 7913), (119, 7946), (123, 7988), (129, 8054), (134, 8099), (135, 8111), (137, 8144),