

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 294644 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294644 has 85 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Ranunculus_16
- Track 2 : Tank_16, Wilde_16
- Track 3 : Rizwana_15
- Track 4 : RazzB_17, Kubulix_22, BetaFish_21, NyleyClemson_18, Forrestell_18, DogYard_21, RIPWilbur_19, PhuzzTulsa_19, MellowYellow_18, Popstraw_20, Pureglobe5_23, Pointis_21, Odyssey395_23, Hive_20
- Track 5 : Ollypop_19
- Track 6 : Beagle_22
- Track 7 : BruhMoment_17
- Track 8 : AWGoat_16
- Track 9 : SilentRX_17
- Track 10 : Quammi_19, Sillytadpoles_20, Grassboy_22, Kyva_23, StrawberryJamm_23, Teehee_22, Rudy_19, Viceroy_20, Mentos_25
- Track 11 : Mila11_23, Tissue_20
- Track 12 : AluminumJesus_18, WheelerS25_26
- Track 13 : MorillMayhem_19, BaconCheese_23, Nike_21, Blab_18, Squash_23
- Track 14 : OneinaGillian_20, Tempo_20
- Track 15 : Phinky_27
- Track 16 : Jehoshaphat_23, DonaldDuck_20, Lonelysoil_20, Wayne3_22, Casend_22, Wheelie_20
- Track 17 : Mashley_18, Llemily_20, Hyperion_19, SallyK_22
- Track 18 : KillerQueen_21, Kelcole_19, CandC_19, Romm_21, RobinRose_21
- Track 19 : Gazebo_20
- Track 20 : Fransoyer_22
- Track 21 : RubyRalph_22
- Track 22 : Statler_21
- Track 23 : FrankDeliGuy_18
- Track 24 : EverythinBagel_20
- Track 25 : BirdInFrench_20, Wilca_20
- Track 26 : BabyDotz_20
- Track 27 : Pepe25_19
- Track 28 : Marcie_25
- Track 29 : Phabia_21, Judebell_23
- Track 30 : Fizzles_21
- Track 31 : Rowlf_17, Zagie_21
- Track 32 : SlySloth_23
- Track 33 : Namago_21, Zhafia_23

- Track 34 : Altheas_22
- Track 35 : Fregley_21
- Track 36 : SadLad_23
- Track 37 : RomansRevenge_12, Boise_12
- Track 38 : Kithara_21
- Track 39 : Sunfish_24

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

The start number called the most often in the published annotations is 19, it was called in 55 of the 70 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Altheas_22, AluminumJesus_18, BabyDotz_20, BaconCheese_23, BetaFish_21, Blab_18, Boise_12, BruhMoment_17, Casend_22, DogYard_21, DonaldDuck_20, EverythinBagel_20, Fizzles_21, Forrestell_18, FrankDeliGuy_18, Fransoyer_22, Gazebo_20, Grassboy_22, Hive_20, Hyperion_19, Jehoshaphat_23, Judebell_23, Kubulix_22, Kyva_23, Llemily_20, Lonelysoil_20, Mashley_18, MellowYellow_18, Mentos_25, Mila11_23, MorillMayhem_19, Namago_21, Nike_21, NyleyClemson_18, Odyssey395_23, Ollypop_19, Phabia_21, Phinky_27, PhuzzTulsa_19, Pointis_21, Popstraw_20, Pureglobe5_23, Quammi_19, RIPWilbur_19, Ranunculus_16, RazzB_17, Rizwana_15, RomansRevenge_12, Rowlf_17, RubyRalph_22, Rudy_19, SadLad_23, SallyK_22, Sillytadpoles_20, SlySloth_23, Squash_23, Statler_21, StrawberryJamm_23, Sunfish_24, Tank_16, Teehee_22, Tissue_20, Viceroy_20, Wayne3_22, WheelerS25_26, Wheelie_20, Wilde_16, Zagie_21, Zhafia_23,

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

- AWGoat_16, Beagle_22, SilentRX_17,

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

- BirdInFrench_20, CandC_19, Fregley_21, Kelcole_19, KillerQueen_21, Kithara_21, Marcie_25, OneinaGillian_20, Pepe25_19, RobinRose_21, Romm_21, Tempo_20, Wilca_20,

Summary by start number:

Start 17:

- Found in 1 of 85 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kithara_21 (singleton),

Start 18:

- Found in 12 of 85 (14.1%) of genes in pham
- Manual Annotations of this start: 11 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BirdInFrench_20 (EG), CandC_19 (EG), Fregley_21 (EG), Kelcole_19 (EG), KillerQueen_21 (EG), Marcie_25 (EG), OneinaGillian_20 (EG), Pepe25_19 (EG), RobinRose_21 (EG), Romm_21 (EG), Tempo_20 (EG), Wilca_20 (EG),

Start 19:

- Found in 72 of 85 (84.7%) of genes in pham
- Manual Annotations of this start: 55 of 70
- Called 95.8% of time when present
- Phage (with cluster) where this start called: Altheas_22 (EG), AluminumJesus_18 (EG), BabyDotz_20 (EG), BaconCheese_23 (EG), BetaFish_21 (AP2), Blab_18 (EG), Boise_12 (FT), BruhMoment_17 (AP3), Casend_22 (EG), DogYard_21 (AP2), DonaldDuck_20 (EG), EverythinBagel_20 (EG), Fizzles_21 (EG), Forrestell_18 (AP2), FrankDeliGuy_18 (EG), Fransoyer_22 (EG), Gazebo_20 (EG), Grassboy_22 (EG), Hive_20 (AP2), Hyperion_19 (EG), Jehoshaphat_23 (EG), Judebell_23 (EG), Kubulix_22 (AP2), Kyva_23 (EG), Llemily_20 (EG), Lonelysoil_20 (EG), Mashley_18 (EG), MellowYellow_18 (AP2), Mentos_25 (EG), Mila11_23 (EG), MorillMayhem_19 (EG), Namago_21 (EG), Nike_21 (EG), NyleyClemson_18 (AP2), Odyssey395_23 (AP2), Ollypop_19 (AP2), Phabia_21 (EG), Phinky_27 (EG), PhuzzTulsa_19 (AP2), Pointis_21 (AP2), Popstraw_20 (AP2), Pureglobe5_23 (AP2), Quammi_19 (EG), RIPWilbur_19 (AP2), Ranunculus_16 (AP), RazzB_17 (AP2), Rizwana_15 (AP1), RomansRevenge_12 (FT), Rowlf_17 (EG), RubyRalph_22 (EG), Rudy_19 (EG), SadLad_23 (EG), SallyK_22 (EG), Sillytadpoles_20 (EG), SlySloth_23 (EG), Squash_23 (EG), Statler_21 (EG), StrawberryJamm_23 (EG), Sunfish_24 (singleton), Tank_16 (AP1), Teehee_22 (EG), Tissue_20 (EG), Viceroy_20 (EG), Wayne3_22 (EG), WheelerS25_26 (EG), Wheelie_20 (EG), Wilde_16 (AP1), Zagie_21 (EG), Zhafia_23 (EG),

Start 20:

- Found in 22 of 85 (25.9%) of genes in pham
- Manual Annotations of this start: 2 of 70
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Beagle_22 (AP2), SilentRX_17 (AP4),

Start 22:

- Found in 2 of 85 (2.4%) of genes in pham
- Manual Annotations of this start: 1 of 70
- Called 50.0% of time when present
- Phage (with cluster) where this start called: AWGoat_16 (AP4),

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 19 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP1:

- Start number 19 was manually annotated 3 times for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 19 was manually annotated 9 times for cluster AP2.
- Start number 20 was manually annotated 1 time for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 19 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 20 was manually annotated 1 time for cluster AP4.
- Start number 22 was manually annotated 1 time for cluster AP4.

Info for manual annotations of cluster EG:

- Start number 18 was manually annotated 11 times for cluster EG.
- Start number 19 was manually annotated 39 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_16 Start: 8424, Stop: 8723, Start Num: 22

Candidate Starts for AWGoat_16:

(4, 7521), (7, 7770), (12, 7998), (Start: 19 @8409 has 55 MA's), (Start: 20 @8412 has 2 MA's), (Start: 22 @8424 has 1 MA's), (24, 8430), (40, 8583), (47, 8667), (48, 8691),

Gene: Altheas_22 Start: 8371, Stop: 8715, Start Num: 19

Candidate Starts for Altheas_22:

(13, 8140), (Start: 19 @8371 has 55 MA's), (21, 8380), (27, 8428), (44, 8614), (48, 8680), (50, 8689),

Gene: AluminumJesus_18 Start: 7735, Stop: 8079, Start Num: 19

Candidate Starts for AluminumJesus_18:

(11, 7315), (13, 7504), (Start: 19 @7735 has 55 MA's), (21, 7744), (27, 7792), (44, 7978), (48, 8044), (50, 8053),

Gene: BabyDotz_20 Start: 8186, Stop: 8524, Start Num: 19

Candidate Starts for BabyDotz_20:

(13, 7955), (Start: 19 @8186 has 55 MA's), (21, 8195), (26, 8234), (27, 8243), (48, 8495), (50, 8504),

Gene: BaconCheese_23 Start: 8883, Stop: 9227, Start Num: 19

Candidate Starts for BaconCheese_23:

(Start: 19 @8883 has 55 MA's), (21, 8892), (27, 8940), (44, 9126), (48, 9192), (50, 9201),

Gene: Beagle_22 Start: 8934, Stop: 9242, Start Num: 20

Candidate Starts for Beagle_22:

(Start: 19 @8931 has 55 MA's), (Start: 20 @8934 has 2 MA's), (26, 8964), (40, 9105), (46, 9186), (48, 9213),

Gene: BetaFish_21 Start: 9134, Stop: 9445, Start Num: 19

Candidate Starts for BetaFish_21:

(Start: 19 @9134 has 55 MA's), (Start: 20 @9137 has 2 MA's), (26, 9167), (40, 9308), (46, 9389), (48, 9416),

Gene: BirdInFrench_20 Start: 7061, Stop: 7405, Start Num: 18

Candidate Starts for BirdInFrench_20:

(14, 6932), (Start: 18 @7061 has 11 MA's), (27, 7118), (29, 7148), (38, 7226), (48, 7370), (50, 7379),

Gene: Blab_18 Start: 7511, Stop: 7855, Start Num: 19

Candidate Starts for Blab_18:

(Start: 19 @7511 has 55 MA's), (21, 7520), (27, 7568), (44, 7754), (48, 7820), (50, 7829),

Gene: Boise_12 Start: 6049, Stop: 6360, Start Num: 19

Candidate Starts for Boise_12:

(Start: 19 @6049 has 55 MA's), (33, 6148), (48, 6331),

Gene: BruhMoment_17 Start: 8281, Stop: 8610, Start Num: 19

Candidate Starts for BruhMoment_17:

(16, 8251), (Start: 19 @8281 has 55 MA's), (32, 8398), (34, 8407), (48, 8584),

Gene: CandC_19 Start: 6747, Stop: 7091, Start Num: 18

Candidate Starts for CandC_19:

(10, 6162), (11, 6306), (14, 6618), (Start: 18 @6747 has 11 MA's), (23, 6777), (24, 6783), (27, 6804), (29, 6834), (38, 6912), (44, 6990), (48, 7056), (50, 7065),

Gene: Casend_22 Start: 8510, Stop: 8848, Start Num: 19

Candidate Starts for Casend_22:

(5, 7655), (8, 7904), (10, 7949), (13, 8279), (Start: 19 @8510 has 55 MA's), (21, 8519), (27, 8567), (48, 8819), (50, 8828),

Gene: DogYard_21 Start: 9001, Stop: 9312, Start Num: 19

Candidate Starts for DogYard_21:

(Start: 19 @9001 has 55 MA's), (Start: 20 @9004 has 2 MA's), (26, 9034), (40, 9175), (46, 9256), (48, 9283),

Gene: DonaldDuck_20 Start: 7856, Stop: 8194, Start Num: 19

Candidate Starts for DonaldDuck_20:

(5, 7001), (8, 7250), (10, 7295), (13, 7625), (Start: 19 @7856 has 55 MA's), (21, 7865), (27, 7913), (48, 8165), (50, 8174),

Gene: EverythinBagel_20 Start: 8257, Stop: 8601, Start Num: 19

Candidate Starts for EverythinBagel_20:

(Start: 19 @8257 has 55 MA's), (21, 8266), (26, 8305), (27, 8314), (44, 8500), (48, 8566), (50, 8575),

Gene: Fizzles_21 Start: 7811, Stop: 8155, Start Num: 19

Candidate Starts for Fizzles_21:

(Start: 19 @7811 has 55 MA's), (27, 7868), (44, 8054), (48, 8120), (50, 8129),

Gene: Forrestell_18 Start: 7645, Stop: 7956, Start Num: 19

Candidate Starts for Forrestell_18:

(Start: 19 @7645 has 55 MA's), (Start: 20 @7648 has 2 MA's), (26, 7678), (40, 7819), (46, 7900), (48, 7927),

Gene: FrankDeliGuy_18 Start: 7715, Stop: 8053, Start Num: 19

Candidate Starts for FrankDeliGuy_18:

(5, 6860), (8, 7109), (13, 7484), (Start: 19 @7715 has 55 MA's), (21, 7724), (26, 7763), (27, 7772), (44, 7958), (48, 8024), (50, 8033),

Gene: Fransoyer_22 Start: 8000, Stop: 8341, Start Num: 19

Candidate Starts for Fransoyer_22:

(1, 6860), (2, 6881), (5, 7121), (8, 7370), (9, 7382), (14, 7868), (Start: 19 @8000 has 55 MA's), (27, 8057), (36, 8129), (44, 8243), (48, 8309), (49, 8312), (50, 8318),

Gene: Fregley_21 Start: 7285, Stop: 7629, Start Num: 18

Candidate Starts for Fregley_21:

(11, 6844), (14, 7156), (Start: 18 @7285 has 11 MA's), (23, 7315), (24, 7321), (27, 7342), (29, 7372), (38, 7450), (44, 7528), (48, 7594), (50, 7603),

Gene: Gazebo_20 Start: 8077, Stop: 8421, Start Num: 19

Candidate Starts for Gazebo_20:

(5, 7222), (8, 7471), (11, 7657), (13, 7846), (Start: 19 @8077 has 55 MA's), (21, 8086), (27, 8134), (44, 8320), (48, 8386), (50, 8395),

Gene: Grassboy_22 Start: 8532, Stop: 8870, Start Num: 19

Candidate Starts for Grassboy_22:

(Start: 19 @8532 has 55 MA's), (21, 8541), (27, 8589), (48, 8841), (50, 8850),

Gene: Hive_20 Start: 9015, Stop: 9326, Start Num: 19

Candidate Starts for Hive_20:

(Start: 19 @9015 has 55 MA's), (Start: 20 @9018 has 2 MA's), (26, 9048), (40, 9189), (46, 9270), (48, 9297),

Gene: Hyperion_19 Start: 7780, Stop: 8124, Start Num: 19

Candidate Starts for Hyperion_19:

(5, 6925), (8, 7174), (13, 7549), (Start: 19 @7780 has 55 MA's), (21, 7789), (27, 7837), (48, 8089), (50, 8098),

Gene: Jehoshaphat_23 Start: 8775, Stop: 9113, Start Num: 19

Candidate Starts for Jehoshaphat_23:

(5, 7920), (8, 8169), (10, 8214), (13, 8544), (Start: 19 @8775 has 55 MA's), (21, 8784), (27, 8832), (48, 9084), (50, 9093),

Gene: Judebell_23 Start: 8316, Stop: 8654, Start Num: 19

Candidate Starts for Judebell_23:

(13, 8085), (Start: 19 @8316 has 55 MA's), (21, 8325), (27, 8373), (48, 8625), (50, 8634),

Gene: Kelcole_19 Start: 7138, Stop: 7482, Start Num: 18

Candidate Starts for Kelcole_19:

(10, 6553), (11, 6697), (14, 7009), (Start: 18 @7138 has 11 MA's), (23, 7168), (24, 7174), (27, 7195), (29, 7225), (38, 7303), (44, 7381), (48, 7447), (50, 7456),

Gene: KillerQueen_21 Start: 6954, Stop: 7298, Start Num: 18

Candidate Starts for KillerQueen_21:

(10, 6369), (11, 6513), (14, 6825), (Start: 18 @6954 has 11 MA's), (23, 6984), (24, 6990), (27, 7011), (29, 7041), (38, 7119), (44, 7197), (48, 7263), (50, 7272),

Gene: Kithara_21 Start: 9380, Stop: 9730, Start Num: 17

Candidate Starts for Kithara_21:

(Start: 17 @9380 has 1 MA's), (27, 9440), (28, 9467), (31, 9476), (34, 9503), (35, 9509), (42, 9587), (44, 9626), (49, 9695),

Gene: Kubulix_22 Start: 9130, Stop: 9441, Start Num: 19

Candidate Starts for Kubulix_22:

(Start: 19 @9130 has 55 MA's), (Start: 20 @9133 has 2 MA's), (26, 9163), (40, 9304), (46, 9385), (48, 9412),

Gene: Kyva_23 Start: 8567, Stop: 8905, Start Num: 19
Candidate Starts for Kyva_23:
(Start: 19 @8567 has 55 MA's), (21, 8576), (27, 8624), (48, 8876), (50, 8885),

Gene: Llemily_20 Start: 7551, Stop: 7889, Start Num: 19
Candidate Starts for Llemily_20:
(5, 6696), (8, 6945), (13, 7320), (Start: 19 @7551 has 55 MA's), (21, 7560), (27, 7608), (48, 7860), (50, 7869),

Gene: Lonelysoil_20 Start: 7796, Stop: 8134, Start Num: 19
Candidate Starts for Lonelysoil_20:
(5, 6941), (8, 7190), (10, 7235), (13, 7565), (Start: 19 @7796 has 55 MA's), (21, 7805), (27, 7853), (48, 8105), (50, 8114),

Gene: Marcie_25 Start: 7843, Stop: 8187, Start Num: 18
Candidate Starts for Marcie_25:
(11, 7402), (14, 7714), (Start: 18 @7843 has 11 MA's), (27, 7900), (28, 7927), (29, 7930), (38, 8008), (44, 8086), (48, 8152), (50, 8161),

Gene: Mashley_18 Start: 7591, Stop: 7935, Start Num: 19
Candidate Starts for Mashley_18:
(5, 6736), (8, 6985), (13, 7360), (Start: 19 @7591 has 55 MA's), (21, 7600), (27, 7648), (48, 7900), (50, 7909),

Gene: MellowYellow_18 Start: 7675, Stop: 7986, Start Num: 19
Candidate Starts for MellowYellow_18:
(Start: 19 @7675 has 55 MA's), (Start: 20 @7678 has 2 MA's), (26, 7708), (40, 7849), (46, 7930), (48, 7957),

Gene: Mentos_25 Start: 9130, Stop: 9468, Start Num: 19
Candidate Starts for Mentos_25:
(Start: 19 @9130 has 55 MA's), (21, 9139), (27, 9187), (48, 9439), (50, 9448),

Gene: Mila11_23 Start: 8666, Stop: 9010, Start Num: 19
Candidate Starts for Mila11_23:
(Start: 19 @8666 has 55 MA's), (21, 8675), (27, 8723), (44, 8909), (48, 8975), (50, 8984),

Gene: MorillMayhem_19 Start: 7599, Stop: 7943, Start Num: 19
Candidate Starts for MorillMayhem_19:
(Start: 19 @7599 has 55 MA's), (21, 7608), (27, 7656), (44, 7842), (48, 7908), (50, 7917),

Gene: Namago_21 Start: 7611, Stop: 7955, Start Num: 19
Candidate Starts for Namago_21:
(13, 7380), (Start: 19 @7611 has 55 MA's), (21, 7620), (27, 7668), (44, 7854), (48, 7920), (50, 7929),

Gene: Nike_21 Start: 8517, Stop: 8861, Start Num: 19
Candidate Starts for Nike_21:
(Start: 19 @8517 has 55 MA's), (21, 8526), (27, 8574), (44, 8760), (48, 8826), (50, 8835),

Gene: NyleyClemson_18 Start: 7617, Stop: 7928, Start Num: 19
Candidate Starts for NyleyClemson_18:

(Start: 19 @7617 has 55 MA's), (Start: 20 @7620 has 2 MA's), (26, 7650), (40, 7791), (46, 7872), (48, 7899),

Gene: Odyssey395_23 Start: 9132, Stop: 9443, Start Num: 19

Candidate Starts for Odyssey395_23:

(Start: 19 @9132 has 55 MA's), (Start: 20 @9135 has 2 MA's), (26, 9165), (40, 9306), (46, 9387), (48, 9414),

Gene: Ollypop_19 Start: 8113, Stop: 8424, Start Num: 19

Candidate Starts for Ollypop_19:

(Start: 19 @8113 has 55 MA's), (Start: 20 @8116 has 2 MA's), (37, 8239), (38, 8263), (40, 8287), (46, 8368), (48, 8395),

Gene: OneinaGillian_20 Start: 6820, Stop: 7164, Start Num: 18

Candidate Starts for OneinaGillian_20:

(14, 6691), (Start: 18 @6820 has 11 MA's), (23, 6850), (24, 6856), (27, 6877), (29, 6907), (38, 6985), (44, 7063), (48, 7129), (50, 7138),

Gene: Pepe25_19 Start: 7078, Stop: 7422, Start Num: 18

Candidate Starts for Pepe25_19:

(3, 6037), (6, 6271), (10, 6493), (14, 6949), (Start: 18 @7078 has 11 MA's), (27, 7135), (29, 7165), (38, 7243), (48, 7387), (50, 7396),

Gene: Phabia_21 Start: 7969, Stop: 8307, Start Num: 19

Candidate Starts for Phabia_21:

(13, 7738), (Start: 19 @7969 has 55 MA's), (21, 7978), (27, 8026), (48, 8278), (50, 8287),

Gene: Phinky_27 Start: 8832, Stop: 9176, Start Num: 19

Candidate Starts for Phinky_27:

(Start: 19 @8832 has 55 MA's), (28, 8916), (30, 8922), (44, 9075), (48, 9141), (50, 9150),

Gene: PhuzzTulsa_19 Start: 8919, Stop: 9230, Start Num: 19

Candidate Starts for PhuzzTulsa_19:

(Start: 19 @8919 has 55 MA's), (Start: 20 @8922 has 2 MA's), (26, 8952), (40, 9093), (46, 9174), (48, 9201),

Gene: Pointis_21 Start: 9130, Stop: 9441, Start Num: 19

Candidate Starts for Pointis_21:

(Start: 19 @9130 has 55 MA's), (Start: 20 @9133 has 2 MA's), (26, 9163), (40, 9304), (46, 9385), (48, 9412),

Gene: Popstraw_20 Start: 8919, Stop: 9230, Start Num: 19

Candidate Starts for Popstraw_20:

(Start: 19 @8919 has 55 MA's), (Start: 20 @8922 has 2 MA's), (26, 8952), (40, 9093), (46, 9174), (48, 9201),

Gene: Pureglobe5_23 Start: 9146, Stop: 9457, Start Num: 19

Candidate Starts for Pureglobe5_23:

(Start: 19 @9146 has 55 MA's), (Start: 20 @9149 has 2 MA's), (26, 9179), (40, 9320), (46, 9401), (48, 9428),

Gene: Quammi_19 Start: 7540, Stop: 7878, Start Num: 19

Candidate Starts for Quammi_19:

(Start: 19 @7540 has 55 MA's), (21, 7549), (27, 7597), (48, 7849), (50, 7858),

Gene: RIPWilbur_19 Start: 8282, Stop: 8593, Start Num: 19

Candidate Starts for RIPWilbur_19:

(Start: 19 @8282 has 55 MA's), (Start: 20 @8285 has 2 MA's), (26, 8315), (40, 8456), (46, 8537), (48, 8564),

Gene: Ranunculus_16 Start: 8071, Stop: 8382, Start Num: 19

Candidate Starts for Ranunculus_16:

(Start: 19 @8071 has 55 MA's), (Start: 20 @8074 has 2 MA's), (33, 8170), (34, 8176), (35, 8182), (40, 8245), (45, 8302), (48, 8353),

Gene: RazzB_17 Start: 7445, Stop: 7756, Start Num: 19

Candidate Starts for RazzB_17:

(Start: 19 @7445 has 55 MA's), (Start: 20 @7448 has 2 MA's), (26, 7478), (40, 7619), (46, 7700), (48, 7727),

Gene: Rizwana_15 Start: 8050, Stop: 8361, Start Num: 19

Candidate Starts for Rizwana_15:

(Start: 19 @8050 has 55 MA's), (Start: 20 @8053 has 2 MA's), (34, 8155), (40, 8224), (48, 8332),

Gene: RobinRose_21 Start: 6973, Stop: 7317, Start Num: 18

Candidate Starts for RobinRose_21:

(10, 6388), (11, 6532), (14, 6844), (Start: 18 @6973 has 11 MA's), (23, 7003), (24, 7009), (27, 7030), (29, 7060), (38, 7138), (44, 7216), (48, 7282), (50, 7291),

Gene: RomansRevenge_12 Start: 6049, Stop: 6360, Start Num: 19

Candidate Starts for RomansRevenge_12:

(Start: 19 @6049 has 55 MA's), (33, 6148), (48, 6331),

Gene: Romm_21 Start: 6973, Stop: 7317, Start Num: 18

Candidate Starts for Romm_21:

(10, 6388), (11, 6532), (14, 6844), (Start: 18 @6973 has 11 MA's), (23, 7003), (24, 7009), (27, 7030), (29, 7060), (38, 7138), (44, 7216), (48, 7282), (50, 7291),

Gene: Rowlf_17 Start: 7306, Stop: 7644, Start Num: 19

Candidate Starts for Rowlf_17:

(Start: 19 @7306 has 55 MA's), (21, 7315), (26, 7354), (27, 7363), (44, 7549), (48, 7615), (50, 7624),

Gene: RubyRalph_22 Start: 7934, Stop: 8275, Start Num: 19

Candidate Starts for RubyRalph_22:

(1, 6794), (5, 7055), (8, 7304), (9, 7316), (14, 7802), (Start: 19 @7934 has 55 MA's), (27, 7991), (36, 8063), (44, 8177), (48, 8243), (49, 8246), (50, 8252),

Gene: Rudy_19 Start: 7540, Stop: 7878, Start Num: 19

Candidate Starts for Rudy_19:

(Start: 19 @7540 has 55 MA's), (21, 7549), (27, 7597), (48, 7849), (50, 7858),

Gene: SadLad_23 Start: 8391, Stop: 8732, Start Num: 19

Candidate Starts for SadLad_23:

(8, 7761), (9, 7773), (14, 8259), (Start: 19 @8391 has 55 MA's), (27, 8448), (36, 8520), (44, 8634), (48, 8700), (49, 8703), (50, 8709),

Gene: SallyK_22 Start: 8701, Stop: 9039, Start Num: 19

Candidate Starts for SallyK_22:

(5, 7846), (8, 8095), (13, 8470), (Start: 19 @8701 has 55 MA's), (21, 8710), (27, 8758), (48, 9010), (50, 9019),

Gene: SilentRX_17 Start: 8205, Stop: 8516, Start Num: 20

Candidate Starts for SilentRX_17:

(15, 8109), (Start: 19 @8202 has 55 MA's), (Start: 20 @8205 has 2 MA's), (Start: 22 @8217 has 1 MA's), (24, 8223), (47, 8460), (48, 8484),

Gene: Sillytadpoles_20 Start: 7538, Stop: 7876, Start Num: 19

Candidate Starts for Sillytadpoles_20:

(Start: 19 @7538 has 55 MA's), (21, 7547), (27, 7595), (48, 7847), (50, 7856),

Gene: SlySloth_23 Start: 8492, Stop: 8830, Start Num: 19

Candidate Starts for SlySloth_23:

(5, 7637), (8, 7886), (13, 8261), (Start: 19 @8492 has 55 MA's), (21, 8501), (27, 8549), (44, 8735), (48, 8801), (50, 8810),

Gene: Squash_23 Start: 8572, Stop: 8916, Start Num: 19

Candidate Starts for Squash_23:

(Start: 19 @8572 has 55 MA's), (21, 8581), (27, 8629), (44, 8815), (48, 8881), (50, 8890),

Gene: Statler_21 Start: 8077, Stop: 8421, Start Num: 19

Candidate Starts for Statler_21:

(13, 7846), (Start: 19 @8077 has 55 MA's), (21, 8086), (27, 8134), (44, 8320), (48, 8386), (50, 8395),

Gene: StrawberryJamm_23 Start: 7840, Stop: 8178, Start Num: 19

Candidate Starts for StrawberryJamm_23:

(Start: 19 @7840 has 55 MA's), (21, 7849), (27, 7897), (48, 8149), (50, 8158),

Gene: Sunfish_24 Start: 9142, Stop: 9498, Start Num: 19

Candidate Starts for Sunfish_24:

(Start: 19 @9142 has 55 MA's), (24, 9175), (25, 9184), (30, 9229), (43, 9394), (45, 9412), (48, 9463),

Gene: Tank_16 Start: 8065, Stop: 8376, Start Num: 19

Candidate Starts for Tank_16:

(15, 7972), (Start: 19 @8065 has 55 MA's), (Start: 20 @8068 has 2 MA's), (39, 8218), (40, 8239), (41, 8245), (47, 8323), (48, 8347),

Gene: Teehee_22 Start: 8775, Stop: 9113, Start Num: 19

Candidate Starts for Teehee_22:

(Start: 19 @8775 has 55 MA's), (21, 8784), (27, 8832), (48, 9084), (50, 9093),

Gene: Tempo_20 Start: 7165, Stop: 7509, Start Num: 18

Candidate Starts for Tempo_20:

(14, 7036), (Start: 18 @7165 has 11 MA's), (23, 7195), (24, 7201), (27, 7222), (29, 7252), (38, 7330), (44, 7408), (48, 7474), (50, 7483),

Gene: Tissue_20 Start: 7909, Stop: 8253, Start Num: 19

Candidate Starts for Tissue_20:

(Start: 19 @7909 has 55 MA's), (21, 7918), (27, 7966), (44, 8152), (48, 8218), (50, 8227),

Gene: Viceroy_20 Start: 7540, Stop: 7878, Start Num: 19
Candidate Starts for Viceroy_20:
(Start: 19 @7540 has 55 MA's), (21, 7549), (27, 7597), (48, 7849), (50, 7858),

Gene: Wayne3_22 Start: 8505, Stop: 8843, Start Num: 19
Candidate Starts for Wayne3_22:
(5, 7650), (8, 7899), (10, 7944), (13, 8274), (Start: 19 @8505 has 55 MA's), (21, 8514), (27, 8562), (48, 8814), (50, 8823),

Gene: WheelerS25_26 Start: 9288, Stop: 9632, Start Num: 19
Candidate Starts for WheelerS25_26:
(11, 8868), (13, 9057), (Start: 19 @9288 has 55 MA's), (21, 9297), (27, 9345), (44, 9531), (48, 9597), (50, 9606),

Gene: Wheelie_20 Start: 7856, Stop: 8194, Start Num: 19
Candidate Starts for Wheelie_20:
(5, 7001), (8, 7250), (10, 7295), (13, 7625), (Start: 19 @7856 has 55 MA's), (21, 7865), (27, 7913), (48, 8165), (50, 8174),

Gene: Wilca_20 Start: 7061, Stop: 7405, Start Num: 18
Candidate Starts for Wilca_20:
(14, 6932), (Start: 18 @7061 has 11 MA's), (27, 7118), (29, 7148), (38, 7226), (48, 7370), (50, 7379),

Gene: Wilde_16 Start: 7993, Stop: 8304, Start Num: 19
Candidate Starts for Wilde_16:
(15, 7900), (Start: 19 @7993 has 55 MA's), (Start: 20 @7996 has 2 MA's), (39, 8146), (40, 8167), (41, 8173), (47, 8251), (48, 8275),

Gene: Zagie_21 Start: 8043, Stop: 8381, Start Num: 19
Candidate Starts for Zagie_21:
(Start: 19 @8043 has 55 MA's), (21, 8052), (26, 8091), (27, 8100), (44, 8286), (48, 8352), (50, 8361),

Gene: Zhafia_23 Start: 8281, Stop: 8625, Start Num: 19
Candidate Starts for Zhafia_23:
(13, 8050), (Start: 19 @8281 has 55 MA's), (21, 8290), (27, 8338), (44, 8524), (48, 8590), (50, 8599),