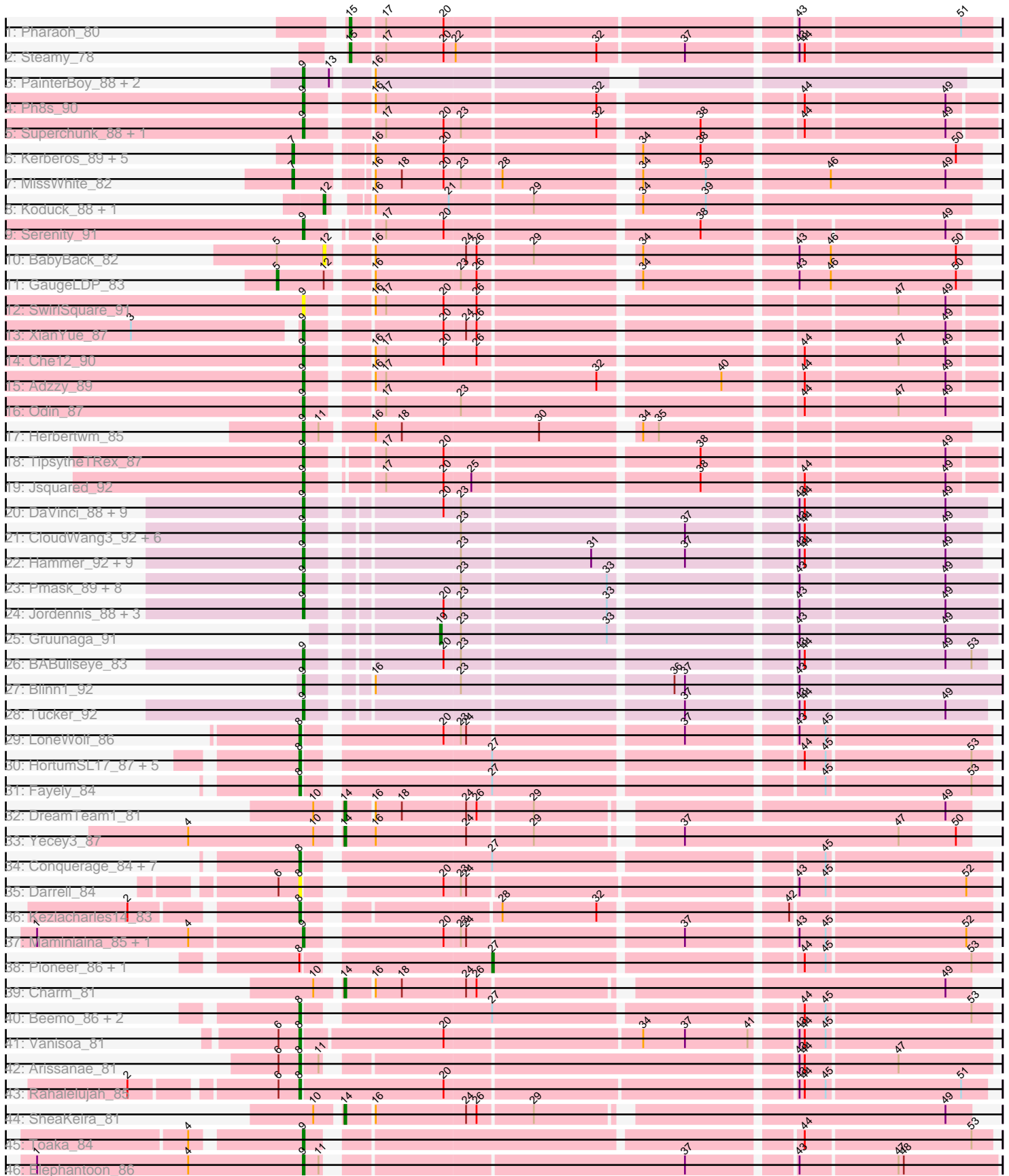


Pham 989



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 989 Report

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

Pham number 989 has 106 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Pharaoh_80
- Track 2 : Steamy_78
- Track 3 : PainterBoy_88, Lucyedi_89, EagleEye_90
- Track 4 : Ph8s_90
- Track 5 : Superchunk_88, Caraxes_89
- Track 6 : Kerberos_89, Tomathan_89, Duplo_90, StarStuff_89, Pomar16_89, DBQu4n_89
- Track 7 : MissWhite_82
- Track 8 : Koduck_88, L5_81
- Track 9 : Serenity_91
- Track 10 : BabyBack_82
- Track 11 : GaugeLDP_83
- Track 12 : SwirlSquare_91
- Track 13 : XianYue_87
- Track 14 : Che12_90
- Track 15 : Adzzy_89
- Track 16 : Odin_87
- Track 17 : Herbertwm_85
- Track 18 : TipsytheTRex_87
- Track 19 : Jsquared_92
- Track 20 : DaVinci_88, Chartreuse_88, SuperCallie99_86, McFly_90, Kazan_91, Candra_88, SmellyB_90, Isiphiwo_86, Priamo_91, VohminGhazi_90
- Track 21 : CloudWang3_92, Roksolana_92, Rifter_92, Zulu_93, ToneTone_89, Artemis2UCLA_91, Hexamo_91
- Track 22 : Hammer_92, Yokurt_91, Zaka_92, Indra_95, Jeffabunny_80, Wiks_91, Blue7_93, Koko_93, Helmet_93, Garak_93
- Track 23 : Pmask_89, EricB_88, Hoot_85, Neeharika16_89, SuperAwesome_90, Gladiator_88, GreedyLawyer_83, Cookiedough_90, Newrala_89
- Track 24 : Jordennis_88, Kipper29_90, JewelBug_82, Dorothea_87
- Track 25 : Gruunaga_91
- Track 26 : BABullseye_83
- Track 27 : Blinn1_92
- Track 28 : Tucker_92
- Track 29 : LoneWolf_86
- Track 30 : HortumSL17_87, Tubs_86, Myxus_86, Phaeder_86, Aliter_79, Catalina_88
- Track 31 : Fayely_84

- Track 32 : DreamTeam1_81
- Track 33 : Yecey3_87
- Track 34 : Conquerage_84, Alma_84, Spouty_81, Eidsmoe_84, ExplosioNervosa_84, Priya_84, Qobbit_84, EmyBug_80
- Track 35 : Darrell_84
- Track 36 : Keziacharles14_83
- Track 37 : Maminiaiina_85, BogosyJay_85
- Track 38 : Pioneer_86, Ugenie5_73
- Track 39 : Charm_81
- Track 40 : Beemo_86, Scherzo_84, Phonnegut_86
- Track 41 : Vanisoa_81
- Track 42 : Arissanae_81
- Track 43 : Rahalelujah_85
- Track 44 : SheaKeira_81
- Track 45 : Toaka_84
- Track 46 : Elephantoon_86

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

The start number called the most often in the published annotations is 9, it was called in 54 of the 93 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adzzy_89, Artemis2UCLA_91, BABullseye_83, Blinn1_92, Blue7_93, BogosyJay_85, Candra_88, Caraxes_89, Chartreuse_88, Che12_90, CloudWang3_92, Cookiedough_90, DaVinci_88, Dorothea_87, EagleEye_90, Elephantoon_86, EricB_88, Garak_93, Gladiator_88, GreedyLawyer_83, Hammer_92, Helmet_93, Herbertwm_85, Hexamo_91, Hoot_85, Indra_95, Isiphiwo_86, Jeffabunny_80, JewelBug_82, Jordennis_88, Jsquared_92, Kazan_91, Kipper29_90, Koko_93, Lucyedi_89, Maminiaiina_85, McFly_90, Neeharika16_89, Newrala_89, Odin_87, PainterBoy_88, Ph8s_90, Pmask_89, Priamo_91, Rifter_92, Roksolana_92, Serenity_91, SmellyB_90, SuperAwesome_90, SuperCallie99_86, Superchunk_88, SwirlSquare_91, TipsytheTRex_87, Toaka_84, ToneTone_89, Tucker_92, VohminGhazi_90, Wiks_91, XianYue_87, Yokurt_91, Zaka_92, Zulu_93,

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

-

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

- Aliter_79, Alma_84, Arissanae_81, BabyBack_82, Beemo_86, Catalina_88, Charm_81, Conquerage_84, DBQu4n_89, Darrell_84, DreamTeam1_81, Duplo_90, Eidsmoe_84, EmyBug_80, ExplosioNervosa_84, Fayely_84, GaugeLDP_83, Gruunaga_91, HortumSL17_87, Kerberos_89, Keziacharles14_83, Koduck_88, L5_81, LoneWolf_86, MissWhite_82, Myxus_86, Phaeder_86, Pharaoh_80, Phonnegut_86, Pioneer_86, Pomar16_89, Priya_84, Qobbit_84, Rahalelujah_85, Scherzo_84, SheaKeira_81, Spouty_81, StarStuff_89, Steamy_78, Tomathan_89, Tubs_86, Ugenie5_73, Vanisoa_81, Yecey3_87,

Summary by start number:

Start 5:

- Found in 2 of 106 (1.9%) of genes in pham
- Manual Annotations of this start: 1 of 93
- Called 50.0% of time when present
- Phage (with cluster) where this start called: GaugeLDP_83 (A2),

Start 7:

- Found in 7 of 106 (6.6%) of genes in pham
- Manual Annotations of this start: 7 of 93
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DBQu4n_89 (A2), Duplo_90 (A2), Kerberos_89 (A2), MissWhite_82 (A2), Pomar16_89 (A2), StarStuff_89 (A2), Tomathan_89 (A2),

Start 8:

- Found in 26 of 106 (24.5%) of genes in pham
- Manual Annotations of this start: 21 of 93
- Called 92.3% of time when present
- Phage (with cluster) where this start called: Aliter_79 (A9), Alma_84 (A9), Arissanae_81 (A9), Beemo_86 (A9), Catalina_88 (A9), Conquerage_84 (A9), Darrell_84 (A9), Eidsmoe_84 (A9), EmyBug_80 (A9), ExplosioNervosa_84 (A9), Fayely_84 (A9), HortumSL17_87 (A9), Keziacharles14_83 (A9), LoneWolf_86 (A9), Myxus_86 (A9), Phaeder_86 (A9), Phonnegut_86 (A9), Priya_84 (A9), Qobbit_84 (A9), Rahalelujah_85 (A9), Scherzo_84 (A9), Spouty_81 (A9), Tubs_86 (A9), Vanisoa_81 (A9),

Start 9:

- Found in 62 of 106 (58.5%) of genes in pham
- Manual Annotations of this start: 54 of 93
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adzzy_89 (A2), Artemis2UCLA_91 (A6), BABullseye_83 (A6), Blinn1_92 (A6), Blue7_93 (A6), BogosyJay_85 (A9), Candra_88 (A6), Caraxes_89 (A2), Chartreuse_88 (A6), Che12_90 (A2), CloudWang3_92 (A6), Cookiedough_90 (A6), DaVinci_88 (A6), Dorothea_87 (A6), EagleEye_90 (A16), Elephantoon_86 (A9), EricB_88 (A6), Garak_93 (A6), Gladiator_88 (A6), GreedyLawyer_83 (A6), Hammer_92 (A6), Helmet_93 (A6), Herbertwm_85 (A2), Hexamo_91 (A6), Hoot_85 (A6), Indra_95 (A6), Isiphiwo_86 (A6), Jeffabunny_80 (A6), JewelBug_82 (A6), Jordennis_88 (A6), Jsquared_92 (A2), Kazan_91 (A6), Kipper29_90 (A6), Koko_93 (A6), Lucyedi_89 (A16), Maminiaina_85 (A9), McFly_90 (A6), Neeharika16_89 (A6), Newrala_89 (A6), Odin_87 (A2), PainterBoy_88 (A16), Ph8s_90 (A2), Pmask_89 (A6), Priamo_91 (A6), Rifter_92 (A6), Roksolana_92 (A6), Serenity_91 (A2), SmellyB_90 (A6), SuperAwesome_90 (A6), SuperCallie99_86 (A6), Superchunk_88 (A2), SwirlSquare_91 (A2), TopsytheTRex_87 (A2), Toaka_84 (A9), ToneTone_89 (A6), Tucker_92 (A6), VohminGhazi_90 (A6), Wiks_91 (A6), XianYue_87 (A2), Yokurt_91 (A6), Zaka_92 (A6), Zulu_93 (A6),

Start 12:

- Found in 4 of 106 (3.8%) of genes in pham
- Manual Annotations of this start: 1 of 93
- Called 75.0% of time when present
- Phage (with cluster) where this start called: BabyBack_82 (A2), Koduck_88 (A2), L5_81 (A2),

Start 14:

- Found in 4 of 106 (3.8%) of genes in pham
- Manual Annotations of this start: 4 of 93
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Charm_81 (A9), DreamTeam1_81 (A9), SheaKeira_81 (A9), Yecey3_87 (A9),

Start 15:

- Found in 2 of 106 (1.9%) of genes in pham
- Manual Annotations of this start: 2 of 93
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pharaoh_80 (A12), Steamy_78 (A12),

Start 19:

- Found in 1 of 106 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 93
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gruunaga_91 (A6),

Start 27:

- Found in 20 of 106 (18.9%) of genes in pham
- Manual Annotations of this start: 2 of 93
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Pioneer_86 (A9), Ugenie5_73 (A9),

Summary by clusters:

There are 5 clusters represented in this pham: A9, A12, A2, A16, A6,

Info for manual annotations of cluster A12:

- Start number 15 was manually annotated 2 times for cluster A12.

Info for manual annotations of cluster A16:

- Start number 9 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 5 was manually annotated 1 time for cluster A2.
- Start number 7 was manually annotated 7 times for cluster A2.
- Start number 9 was manually annotated 10 times for cluster A2.
- Start number 12 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A6:

- Start number 9 was manually annotated 37 times for cluster A6.
- Start number 19 was manually annotated 1 time for cluster A6.

Info for manual annotations of cluster A9:

- Start number 8 was manually annotated 21 times for cluster A9.
- Start number 9 was manually annotated 4 times for cluster A9.
- Start number 14 was manually annotated 4 times for cluster A9.
- Start number 27 was manually annotated 2 times for cluster A9.

Gene Information:

Gene: Adzzy_89 Start: 48360, Stop: 47998, Start Num: 9

Candidate Starts for Adzzy_89:

(Start: 9 @48360 has 54 MA's), (16, 48330), (17, 48324), (32, 48207), (40, 48141), (44, 48102), (49, 48024),

Gene: Aliter_79 Start: 44821, Stop: 44456, Start Num: 8

Candidate Starts for Aliter_79:

(Start: 8 @44821 has 21 MA's), (Start: 27 @44725 has 2 MA's), (44, 44560), (45, 44548), (53, 44467),

Gene: Alma_84 Start: 47664, Stop: 47299, Start Num: 8

Candidate Starts for Alma_84:

(Start: 8 @47664 has 21 MA's), (Start: 27 @47568 has 2 MA's), (45, 47391),

Gene: Arissanae_81 Start: 47556, Stop: 47191, Start Num: 8

Candidate Starts for Arissanae_81:

(6, 47568), (Start: 8 @47556 has 21 MA's), (11, 47547), (43, 47298), (44, 47295), (47, 47244),

Gene: Artemis2UCLA_91 Start: 47904, Stop: 47551, Start Num: 9

Candidate Starts for Artemis2UCLA_91:

(Start: 9 @47904 has 54 MA's), (23, 47829), (37, 47709), (43, 47652), (44, 47649), (49, 47571),

Gene: BABullseye_83 Start: 46239, Stop: 45883, Start Num: 9

Candidate Starts for BABullseye_83:

(Start: 9 @46239 has 54 MA's), (20, 46173), (23, 46164), (43, 45987), (44, 45984), (49, 45906), (53, 45891),

Gene: BabyBack_82 Start: 49865, Stop: 49524, Start Num: 12

Candidate Starts for BabyBack_82:

(Start: 5 @49892 has 1 MA's), (Start: 12 @49865 has 1 MA's), (16, 49844), (24, 49793), (26, 49787), (29, 49757), (34, 49706), (43, 49622), (46, 49604), (50, 49532),

Gene: Beemo_86 Start: 47658, Stop: 47293, Start Num: 8

Candidate Starts for Beemo_86:

(Start: 8 @47658 has 21 MA's), (Start: 27 @47562 has 2 MA's), (44, 47397), (45, 47385), (53, 47304),

Gene: Blinn1_92 Start: 48151, Stop: 47786, Start Num: 9

Candidate Starts for Blinn1_92:

(Start: 9 @48151 has 54 MA's), (16, 48124), (23, 48076), (36, 47962), (37, 47956), (43, 47899),

Gene: Blue7_93 Start: 48138, Stop: 47782, Start Num: 9

Candidate Starts for Blue7_93:

(Start: 9 @48138 has 54 MA's), (23, 48063), (31, 47991), (37, 47943), (43, 47886), (44, 47883), (49, 47805),

Gene: BogosyJay_85 Start: 47709, Stop: 47347, Start Num: 9

Candidate Starts for BogosyJay_85:

(1, 47859), (4, 47772), (Start: 9 @47709 has 54 MA's), (20, 47640), (23, 47631), (24, 47628), (37, 47511), (43, 47454), (45, 47439), (52, 47361),

Gene: Candra_88 Start: 47943, Stop: 47587, Start Num: 9

Candidate Starts for Candra_88:

(Start: 9 @47943 has 54 MA's), (20, 47877), (23, 47868), (43, 47691), (44, 47688), (49, 47610),

Gene: Caraxes_89 Start: 48317, Stop: 47955, Start Num: 9

Candidate Starts for Caraxes_89:

(Start: 9 @48317 has 54 MA's), (17, 48281), (20, 48248), (23, 48239), (32, 48164), (38, 48110), (44, 48059), (49, 47981),

Gene: Catalina_88 Start: 47768, Stop: 47403, Start Num: 8

Candidate Starts for Catalina_88:

(Start: 8 @47768 has 21 MA's), (Start: 27 @47672 has 2 MA's), (44, 47507), (45, 47495), (53, 47414),

Gene: Charm_81 Start: 47064, Stop: 46732, Start Num: 14

Candidate Starts for Charm_81:

(10, 47076), (Start: 14 @47064 has 4 MA's), (16, 47049), (18, 47034), (24, 46998), (26, 46992), (49, 46746),

Gene: Chartreuse_88 Start: 47244, Stop: 46888, Start Num: 9

Candidate Starts for Chartreuse_88:

(Start: 9 @47244 has 54 MA's), (20, 47178), (23, 47169), (43, 46992), (44, 46989), (49, 46911),

Gene: Che12_90 Start: 48439, Stop: 48077, Start Num: 9

Candidate Starts for Che12_90:

(Start: 9 @48439 has 54 MA's), (16, 48409), (17, 48403), (20, 48370), (26, 48352), (44, 48181), (47, 48130), (49, 48103),

Gene: CloudWang3_92 Start: 48433, Stop: 48080, Start Num: 9

Candidate Starts for CloudWang3_92:

(Start: 9 @48433 has 54 MA's), (23, 48358), (37, 48238), (43, 48181), (44, 48178), (49, 48100),

Gene: Conquerage_84 Start: 47433, Stop: 47068, Start Num: 8

Candidate Starts for Conquerage_84:

(Start: 8 @47433 has 21 MA's), (Start: 27 @47337 has 2 MA's), (45, 47160),

Gene: Cookiedough_90 Start: 48558, Stop: 48196, Start Num: 9

Candidate Starts for Cookiedough_90:

(Start: 9 @48558 has 54 MA's), (23, 48483), (33, 48402), (43, 48306), (49, 48225),

Gene: DBQu4n_89 Start: 49102, Stop: 48740, Start Num: 7

Candidate Starts for DBQu4n_89:

(Start: 7 @49102 has 7 MA's), (16, 49066), (20, 49027), (34, 48928), (38, 48895), (50, 48754),

Gene: DaVinci_88 Start: 47298, Stop: 46942, Start Num: 9

Candidate Starts for DaVinci_88:

(Start: 9 @47298 has 54 MA's), (20, 47232), (23, 47223), (43, 47046), (44, 47043), (49, 46965),

Gene: Darrell_84 Start: 46864, Stop: 46502, Start Num: 8

Candidate Starts for Darrell_84:

(6, 46876), (Start: 8 @46864 has 21 MA's), (20, 46798), (23, 46789), (24, 46786), (43, 46609), (45, 46594), (52, 46516),

Gene: Dorothea_87 Start: 48550, Stop: 48188, Start Num: 9

Candidate Starts for Dorothea_87:

(Start: 9 @48550 has 54 MA's), (20, 48484), (23, 48475), (33, 48394), (43, 48298), (49, 48217),

Gene: DreamTeam1_81 Start: 46912, Stop: 46580, Start Num: 14

Candidate Starts for DreamTeam1_81:

(10, 46924), (Start: 14 @46912 has 4 MA's), (16, 46897), (18, 46882), (24, 46846), (26, 46840), (29, 46810), (49, 46594),

Gene: Duplo_90 Start: 49159, Stop: 48797, Start Num: 7

Candidate Starts for Duplo_90:

(Start: 7 @49159 has 7 MA's), (16, 49123), (20, 49084), (34, 48985), (38, 48952), (50, 48811),

Gene: EagleEye_90 Start: 49523, Stop: 49179, Start Num: 9

Candidate Starts for EagleEye_90:

(Start: 9 @49523 has 54 MA's), (13, 49508), (16, 49490),

Gene: Eidsmoe_84 Start: 47425, Stop: 47060, Start Num: 8

Candidate Starts for Eidsmoe_84:

(Start: 8 @47425 has 21 MA's), (Start: 27 @47329 has 2 MA's), (45, 47152),

Gene: Elephantoon_86 Start: 47586, Stop: 47218, Start Num: 9

Candidate Starts for Elephantoon_86:

(1, 47739), (4, 47652), (Start: 9 @47586 has 54 MA's), (11, 47577), (37, 47385), (43, 47328), (47, 47274), (48, 47271),

Gene: EmyBug_80 Start: 47427, Stop: 47062, Start Num: 8

Candidate Starts for EmyBug_80:

(Start: 8 @47427 has 21 MA's), (Start: 27 @47331 has 2 MA's), (45, 47154),

Gene: EricB_88 Start: 47447, Stop: 47085, Start Num: 9

Candidate Starts for EricB_88:

(Start: 9 @47447 has 54 MA's), (23, 47372), (33, 47291), (43, 47195), (49, 47114),

Gene: ExplosioNervosa_84 Start: 47493, Stop: 47128, Start Num: 8

Candidate Starts for ExplosioNervosa_84:

(Start: 8 @47493 has 21 MA's), (Start: 27 @47397 has 2 MA's), (45, 47220),

Gene: Fayely_84 Start: 47401, Stop: 47036, Start Num: 8

Candidate Starts for Fayely_84:

(Start: 8 @47401 has 21 MA's), (Start: 27 @47305 has 2 MA's), (45, 47128), (53, 47047),

Gene: Garak_93 Start: 48378, Stop: 48025, Start Num: 9

Candidate Starts for Garak_93:

(Start: 9 @48378 has 54 MA's), (23, 48303), (31, 48231), (37, 48183), (43, 48126), (44, 48123), (49, 48045),

Gene: GaugeLDP_83 Start: 49442, Stop: 49074, Start Num: 5

Candidate Starts for GaugeLDP_83:

(Start: 5 @49442 has 1 MA's), (Start: 12 @49415 has 1 MA's), (16, 49394), (23, 49346), (26, 49337), (34, 49256), (43, 49172), (46, 49154), (50, 49082),

Gene: Gladiator_88 Start: 48098, Stop: 47736, Start Num: 9

Candidate Starts for Gladiator_88:

(Start: 9 @48098 has 54 MA's), (23, 48023), (33, 47942), (43, 47846), (49, 47765),

Gene: GreedyLawyer_83 Start: 47880, Stop: 47518, Start Num: 9
Candidate Starts for GreedyLawyer_83:
(Start: 9 @47880 has 54 MA's), (23, 47805), (33, 47724), (43, 47628), (49, 47547),

Gene: Gruunaga_91 Start: 47990, Stop: 47691, Start Num: 19
Candidate Starts for Gruunaga_91:
(Start: 19 @47990 has 1 MA's), (23, 47978), (33, 47897), (43, 47801), (49, 47720),

Gene: Hammer_92 Start: 47751, Stop: 47398, Start Num: 9
Candidate Starts for Hammer_92:
(Start: 9 @47751 has 54 MA's), (23, 47676), (31, 47604), (37, 47556), (43, 47499), (44, 47496), (49, 47418),

Gene: Helmet_93 Start: 48378, Stop: 48025, Start Num: 9
Candidate Starts for Helmet_93:
(Start: 9 @48378 has 54 MA's), (23, 48303), (31, 48231), (37, 48183), (43, 48126), (44, 48123), (49, 48045),

Gene: Herbertwm_85 Start: 48938, Stop: 48585, Start Num: 9
Candidate Starts for Herbertwm_85:
(Start: 9 @48938 has 54 MA's), (11, 48929), (16, 48902), (18, 48887), (30, 48809), (34, 48761), (35, 48752),

Gene: Hexamo_91 Start: 47919, Stop: 47566, Start Num: 9
Candidate Starts for Hexamo_91:
(Start: 9 @47919 has 54 MA's), (23, 47844), (37, 47724), (43, 47667), (44, 47664), (49, 47586),

Gene: Hoot_85 Start: 45764, Stop: 45402, Start Num: 9
Candidate Starts for Hoot_85:
(Start: 9 @45764 has 54 MA's), (23, 45689), (33, 45608), (43, 45512), (49, 45431),

Gene: HortumSL17_87 Start: 47766, Stop: 47401, Start Num: 8
Candidate Starts for HortumSL17_87:
(Start: 8 @47766 has 21 MA's), (Start: 27 @47670 has 2 MA's), (44, 47505), (45, 47493), (53, 47412),

Gene: Indra_95 Start: 48379, Stop: 48026, Start Num: 9
Candidate Starts for Indra_95:
(Start: 9 @48379 has 54 MA's), (23, 48304), (31, 48232), (37, 48184), (43, 48127), (44, 48124), (49, 48046),

Gene: Isiphiwo_86 Start: 47469, Stop: 47113, Start Num: 9
Candidate Starts for Isiphiwo_86:
(Start: 9 @47469 has 54 MA's), (20, 47403), (23, 47394), (43, 47217), (44, 47214), (49, 47136),

Gene: Jeffabunny_80 Start: 44522, Stop: 44169, Start Num: 9
Candidate Starts for Jeffabunny_80:
(Start: 9 @44522 has 54 MA's), (23, 44447), (31, 44375), (37, 44327), (43, 44270), (44, 44267), (49, 44189),

Gene: JewelBug_82 Start: 46243, Stop: 45881, Start Num: 9
Candidate Starts for JewelBug_82:
(Start: 9 @46243 has 54 MA's), (20, 46177), (23, 46168), (33, 46087), (43, 45991), (49, 45910),

Gene: Jordennis_88 Start: 48147, Stop: 47785, Start Num: 9

Candidate Starts for Jordennis_88:

(Start: 9 @48147 has 54 MA's), (20, 48081), (23, 48072), (33, 47991), (43, 47895), (49, 47814),

Gene: Jsquared_92 Start: 48907, Stop: 48548, Start Num: 9

Candidate Starts for Jsquared_92:

(Start: 9 @48907 has 54 MA's), (17, 48874), (20, 48841), (25, 48826), (38, 48703), (44, 48652), (49, 48574),

Gene: Kazan_91 Start: 47913, Stop: 47557, Start Num: 9

Candidate Starts for Kazan_91:

(Start: 9 @47913 has 54 MA's), (20, 47847), (23, 47838), (43, 47661), (44, 47658), (49, 47580),

Gene: Kerberos_89 Start: 49122, Stop: 48760, Start Num: 7

Candidate Starts for Kerberos_89:

(Start: 7 @49122 has 7 MA's), (16, 49086), (20, 49047), (34, 48948), (38, 48915), (50, 48774),

Gene: Keziacharles14_83 Start: 48254, Stop: 47895, Start Num: 8

Candidate Starts for Keziacharles14_83:

(2, 48341), (Start: 8 @48254 has 21 MA's), (28, 48158), (32, 48104), (42, 48005),

Gene: Kipper29_90 Start: 47922, Stop: 47560, Start Num: 9

Candidate Starts for Kipper29_90:

(Start: 9 @47922 has 54 MA's), (20, 47856), (23, 47847), (33, 47766), (43, 47670), (49, 47589),

Gene: Koduck_88 Start: 48224, Stop: 47889, Start Num: 12

Candidate Starts for Koduck_88:

(Start: 12 @48224 has 1 MA's), (16, 48209), (21, 48167), (29, 48122), (34, 48071), (39, 48035),

Gene: Koko_93 Start: 48768, Stop: 48415, Start Num: 9

Candidate Starts for Koko_93:

(Start: 9 @48768 has 54 MA's), (23, 48693), (31, 48621), (37, 48573), (43, 48516), (44, 48513), (49, 48435),

Gene: L5_81 Start: 48115, Stop: 47780, Start Num: 12

Candidate Starts for L5_81:

(Start: 12 @48115 has 1 MA's), (16, 48100), (21, 48058), (29, 48013), (34, 47962), (39, 47926),

Gene: LoneWolf_86 Start: 47776, Stop: 47414, Start Num: 8

Candidate Starts for LoneWolf_86:

(Start: 8 @47776 has 21 MA's), (20, 47707), (23, 47698), (24, 47695), (37, 47578), (43, 47521), (45, 47506),

Gene: Lucyedi_89 Start: 49722, Stop: 49378, Start Num: 9

Candidate Starts for Lucyedi_89:

(Start: 9 @49722 has 54 MA's), (13, 49707), (16, 49689),

Gene: Maminiaina_85 Start: 47691, Stop: 47329, Start Num: 9

Candidate Starts for Maminiaina_85:

(1, 47841), (4, 47754), (Start: 9 @47691 has 54 MA's), (20, 47622), (23, 47613), (24, 47610), (37, 47493), (43, 47436), (45, 47421), (52, 47343),

Gene: McFly_90 Start: 48252, Stop: 47896, Start Num: 9

Candidate Starts for McFly_90:

(Start: 9 @48252 has 54 MA's), (20, 48186), (23, 48177), (43, 48000), (44, 47997), (49, 47919),

Gene: MissWhite_82 Start: 45945, Stop: 45583, Start Num: 7

Candidate Starts for MissWhite_82:

(Start: 7 @45945 has 7 MA's), (16, 45909), (18, 45894), (20, 45870), (23, 45861), (28, 45840), (34, 45771), (39, 45735), (46, 45669), (49, 45603),

Gene: Myxus_86 Start: 47766, Stop: 47401, Start Num: 8

Candidate Starts for Myxus_86:

(Start: 8 @47766 has 21 MA's), (Start: 27 @47670 has 2 MA's), (44, 47505), (45, 47493), (53, 47412),

Gene: Neeharika16_89 Start: 48009, Stop: 47647, Start Num: 9

Candidate Starts for Neeharika16_89:

(Start: 9 @48009 has 54 MA's), (23, 47934), (33, 47853), (43, 47757), (49, 47676),

Gene: Newrala_89 Start: 48355, Stop: 47993, Start Num: 9

Candidate Starts for Newrala_89:

(Start: 9 @48355 has 54 MA's), (23, 48280), (33, 48199), (43, 48103), (49, 48022),

Gene: Odin_87 Start: 48785, Stop: 48420, Start Num: 9

Candidate Starts for Odin_87:

(Start: 9 @48785 has 54 MA's), (17, 48749), (23, 48707), (44, 48527), (47, 48476), (49, 48449),

Gene: PainterBoy_88 Start: 49433, Stop: 49089, Start Num: 9

Candidate Starts for PainterBoy_88:

(Start: 9 @49433 has 54 MA's), (13, 49418), (16, 49400),

Gene: Ph8s_90 Start: 48573, Stop: 48211, Start Num: 9

Candidate Starts for Ph8s_90:

(Start: 9 @48573 has 54 MA's), (16, 48543), (17, 48537), (32, 48420), (44, 48315), (49, 48237),

Gene: Phaeder_86 Start: 47641, Stop: 47276, Start Num: 8

Candidate Starts for Phaeder_86:

(Start: 8 @47641 has 21 MA's), (Start: 27 @47545 has 2 MA's), (44, 47380), (45, 47368), (53, 47287),

Gene: Pharaoh_80 Start: 48638, Stop: 48291, Start Num: 15

Candidate Starts for Pharaoh_80:

(Start: 15 @48638 has 2 MA's), (17, 48620), (20, 48587), (43, 48398), (51, 48308),

Gene: Phonnegut_86 Start: 47657, Stop: 47292, Start Num: 8

Candidate Starts for Phonnegut_86:

(Start: 8 @47657 has 21 MA's), (Start: 27 @47561 has 2 MA's), (44, 47396), (45, 47384), (53, 47303),

Gene: Pioneer_86 Start: 47561, Stop: 47292, Start Num: 27

Candidate Starts for Pioneer_86:

(Start: 8 @47657 has 21 MA's), (Start: 27 @47561 has 2 MA's), (44, 47396), (45, 47384), (53, 47303),

Gene: Pmask_89 Start: 48556, Stop: 48194, Start Num: 9

Candidate Starts for Pmask_89:

(Start: 9 @48556 has 54 MA's), (23, 48481), (33, 48400), (43, 48304), (49, 48223),

Gene: Pomar16_89 Start: 49195, Stop: 48833, Start Num: 7

Candidate Starts for Pomar16_89:

(Start: 7 @49195 has 7 MA's), (16, 49159), (20, 49120), (34, 49021), (38, 48988), (50, 48847),

Gene: Priamo_91 Start: 47793, Stop: 47437, Start Num: 9

Candidate Starts for Priamo_91:

(Start: 9 @47793 has 54 MA's), (20, 47727), (23, 47718), (43, 47541), (44, 47538), (49, 47460),

Gene: Priya_84 Start: 47428, Stop: 47063, Start Num: 8

Candidate Starts for Priya_84:

(Start: 8 @47428 has 21 MA's), (Start: 27 @47332 has 2 MA's), (45, 47155),

Gene: Qobbit_84 Start: 47390, Stop: 47025, Start Num: 8

Candidate Starts for Qobbit_84:

(Start: 8 @47390 has 21 MA's), (Start: 27 @47294 has 2 MA's), (45, 47117),

Gene: Rahalelujah_85 Start: 47197, Stop: 46823, Start Num: 8

Candidate Starts for Rahalelujah_85:

(2, 47284), (6, 47209), (Start: 8 @47197 has 21 MA's), (20, 47116), (43, 46927), (44, 46924), (45, 46912), (51, 46837),

Gene: Rifter_92 Start: 47546, Stop: 47193, Start Num: 9

Candidate Starts for Rifter_92:

(Start: 9 @47546 has 54 MA's), (23, 47471), (37, 47351), (43, 47294), (44, 47291), (49, 47213),

Gene: Roksolana_92 Start: 48262, Stop: 47909, Start Num: 9

Candidate Starts for Roksolana_92:

(Start: 9 @48262 has 54 MA's), (23, 48187), (37, 48067), (43, 48010), (44, 48007), (49, 47929),

Gene: Scherzo_84 Start: 47689, Stop: 47324, Start Num: 8

Candidate Starts for Scherzo_84:

(Start: 8 @47689 has 21 MA's), (Start: 27 @47593 has 2 MA's), (44, 47428), (45, 47416), (53, 47335),

Gene: Serenity_91 Start: 48704, Stop: 48345, Start Num: 9

Candidate Starts for Serenity_91:

(Start: 9 @48704 has 54 MA's), (17, 48671), (20, 48638), (38, 48500), (49, 48371),

Gene: SheaKeira_81 Start: 46940, Stop: 46608, Start Num: 14

Candidate Starts for SheaKeira_81:

(10, 46952), (Start: 14 @46940 has 4 MA's), (16, 46925), (24, 46874), (26, 46868), (29, 46838), (49, 46622),

Gene: SmellyB_90 Start: 47907, Stop: 47551, Start Num: 9

Candidate Starts for SmellyB_90:

(Start: 9 @47907 has 54 MA's), (20, 47841), (23, 47832), (43, 47655), (44, 47652), (49, 47574),

Gene: Spouty_81 Start: 47427, Stop: 47062, Start Num: 8

Candidate Starts for Spouty_81:

(Start: 8 @47427 has 21 MA's), (Start: 27 @47331 has 2 MA's), (45, 47154),

Gene: StarStuff_89 Start: 49157, Stop: 48795, Start Num: 7

Candidate Starts for StarStuff_89:

(Start: 7 @49157 has 7 MA's), (16, 49121), (20, 49082), (34, 48983), (38, 48950), (50, 48809),

Gene: Steamy_78 Start: 47733, Stop: 47386, Start Num: 15

Candidate Starts for Steamy_78:

(Start: 15 @47733 has 2 MA's), (17, 47715), (20, 47682), (22, 47676), (32, 47598), (37, 47550), (43, 47493), (44, 47490),

Gene: SuperAwesome_90 Start: 48595, Stop: 48233, Start Num: 9

Candidate Starts for SuperAwesome_90:

(Start: 9 @48595 has 54 MA's), (23, 48520), (33, 48439), (43, 48343), (49, 48262),

Gene: SuperCallie99_86 Start: 47970, Stop: 47614, Start Num: 9

Candidate Starts for SuperCallie99_86:

(Start: 9 @47970 has 54 MA's), (20, 47904), (23, 47895), (43, 47718), (44, 47715), (49, 47637),

Gene: Superchunk_88 Start: 48317, Stop: 47955, Start Num: 9

Candidate Starts for Superchunk_88:

(Start: 9 @48317 has 54 MA's), (17, 48281), (20, 48248), (23, 48239), (32, 48164), (38, 48110), (44, 48059), (49, 47981),

Gene: SwirlSquare_91 Start: 48047, Stop: 47685, Start Num: 9

Candidate Starts for SwirlSquare_91:

(Start: 9 @48047 has 54 MA's), (16, 48017), (17, 48011), (20, 47978), (26, 47960), (47, 47738), (49, 47711),

Gene: TopsytheTRex_87 Start: 48706, Stop: 48347, Start Num: 9

Candidate Starts for TopsytheTRex_87:

(Start: 9 @48706 has 54 MA's), (17, 48673), (20, 48640), (38, 48502), (49, 48373),

Gene: Toaka_84 Start: 47544, Stop: 47182, Start Num: 9

Candidate Starts for Toaka_84:

(4, 47601), (Start: 9 @47544 has 54 MA's), (44, 47286), (53, 47193),

Gene: Tomathan_89 Start: 49236, Stop: 48874, Start Num: 7

Candidate Starts for Tomathan_89:

(Start: 7 @49236 has 7 MA's), (16, 49200), (20, 49161), (34, 49062), (38, 49029), (50, 48888),

Gene: ToneTone_89 Start: 47929, Stop: 47573, Start Num: 9

Candidate Starts for ToneTone_89:

(Start: 9 @47929 has 54 MA's), (23, 47854), (37, 47734), (43, 47677), (44, 47674), (49, 47596),

Gene: Tubs_86 Start: 47641, Stop: 47276, Start Num: 8

Candidate Starts for Tubs_86:

(Start: 8 @47641 has 21 MA's), (Start: 27 @47545 has 2 MA's), (44, 47380), (45, 47368), (53, 47287),

Gene: Tucker_92 Start: 48132, Stop: 47776, Start Num: 9

Candidate Starts for Tucker_92:

(Start: 9 @48132 has 54 MA's), (37, 47937), (43, 47880), (44, 47877), (49, 47799),

Gene: Ugenie5_73 Start: 45037, Stop: 44768, Start Num: 27

Candidate Starts for Ugenie5_73:

(Start: 8 @45133 has 21 MA's), (Start: 27 @45037 has 2 MA's), (44, 44872), (45, 44860), (53, 44779),

Gene: Vanisoa_81 Start: 47884, Stop: 47510, Start Num: 8

Candidate Starts for Vanisoa_81:

(6, 47896), (Start: 8 @47884 has 21 MA's), (20, 47806), (34, 47698), (37, 47674), (41, 47638), (43, 47617), (44, 47614), (45, 47602),

Gene: VohminGhazi_90 Start: 47908, Stop: 47552, Start Num: 9

Candidate Starts for VohminGhazi_90:

(Start: 9 @47908 has 54 MA's), (20, 47842), (23, 47833), (43, 47656), (44, 47653), (49, 47575),

Gene: Wiks_91 Start: 48009, Stop: 47656, Start Num: 9

Candidate Starts for Wiks_91:

(Start: 9 @48009 has 54 MA's), (23, 47934), (31, 47862), (37, 47814), (43, 47757), (44, 47754), (49, 47676),

Gene: XianYue_87 Start: 49656, Stop: 49294, Start Num: 9

Candidate Starts for XianYue_87:

(3, 49746), (Start: 9 @49656 has 54 MA's), (20, 49587), (24, 49575), (26, 49569), (49, 49320),

Gene: Yecey3_87 Start: 47417, Stop: 47076, Start Num: 14

Candidate Starts for Yecey3_87:

(4, 47501), (10, 47429), (Start: 14 @47417 has 4 MA's), (16, 47399), (24, 47348), (29, 47312), (37, 47240), (47, 47117), (50, 47084),

Gene: Yokurt_91 Start: 48009, Stop: 47656, Start Num: 9

Candidate Starts for Yokurt_91:

(Start: 9 @48009 has 54 MA's), (23, 47934), (31, 47862), (37, 47814), (43, 47757), (44, 47754), (49, 47676),

Gene: Zaka_92 Start: 48009, Stop: 47656, Start Num: 9

Candidate Starts for Zaka_92:

(Start: 9 @48009 has 54 MA's), (23, 47934), (31, 47862), (37, 47814), (43, 47757), (44, 47754), (49, 47676),

Gene: Zulu_93 Start: 48386, Stop: 48033, Start Num: 9

Candidate Starts for Zulu_93:

(Start: 9 @48386 has 54 MA's), (23, 48311), (37, 48191), (43, 48134), (44, 48131), (49, 48053),