Pham 343813


1: Zimmer_77
2: Pharaoh_74
3: Refuge_77
4: Jsquared_82
5: Quokka_80 + 1
6: Landor_77 + 1
7: BabyBack_74
8: WeiHuaDA_81
9: Tristan_75 + 1
10: Caraxes_81 + 1
11: Journey13_73
12: IronMan_77
13: Serenity_82 + 1
14: Phaded_74
15: GaugeLDP_73
16: Odin_80
17: Herbertwm_75
18: Kalpine_81
19: Indra_85 + 17
20: Conquerage_79 + 6
21: LoneWolf_81 + 3
22: Fayely_79
23: HortumSL17_82 + 7
24: Phonnegut_81 + 7
25: Jiawan_81
26: DreamTeam1_76 + 2
27: MegTheThird_77
28: Qobbit_79 + 1
29: Vahisoa_76
30: Keziacharles14_78
31: Toaka_79
32: Darrell_79
33: SheaKeira_76
34: Arissanae_76
35: Celestialunch_76
36: Elephantoon_81
37: Fionnbharth_87 + 6
38: Y10_83 + 3
39: Taquito_87 + 7

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 343813 Report

This analysis was run 11/14/26 on database version 672.

Pham number 343813 has 103 members, 7 are drafts.

Phages represented in each track:
- Track 1 : Zimmer_77
- Track 2 : Pharaoh_74
- Track 3 : Refuge_77
- Track 4 : Jsquared_82
- Track 5 : Quokka_80, Bradman_81
- Track 6 : Landor_77, Bactobuster_71
- Track 7 : BabyBack_74
- Track 8 : WeiHuaDA_81
- Track 9 : Tristan_75, Jaan_77
- Track 10 : Caraxes_81, Superchunk_81
- Track 11 : Journey13_73
- Track 12 : IronMan_77
- Track 13 : Serenity_82, TipsytheTRex_78
- Track 14 : Phaded_74
- Track 15 : GaugeLDP_73
- Track 16 : Odin_80
- Track 17 : Herbertwm_75
- Track 18 : Kalpine_81
- Track 19 : Indra_85, Lilbunny_81, Zaka_82, Tucker_82, Zulu_83, ToneTone_79, Artemis2UCLA_81, BennyP_82, WunderPhul_82, Yokurt_81, Koko_83, Blue7_83, BlessJoy_82, Garak_83, Temprado_83, Helmet_84, Roksolana_82, Wiks_81
- Track 20 : Conquerage_79, Alma_79, Priya_79, Ayanochan_78, ExplosioNervosa_79, Eidsmoe_79, EmyBug_78
- Track 21 : LoneWolf_81, EdogawaKiddo_81, Sachima_81, Lilleskat_81
- Track 22 : Fayely_79
- Track 23 : HortumSL17_82, Tubs_81, Catalina_83, PackMan_80, BogosyJay_80, Myxus_81, Phaeder_81, Maminiaina_80
- Track 24 : Phonnegut_81, Pioneer_81, Scherzo_79, Beemo_81, RyeScarlet_81, Hanray_81, Holex_81, Onglai_80
- Track 25 : Jiawan_81
- Track 26 : DreamTeam1_76, Klodlith_77, Charm_76
- Track 27 : MegTheThird_77
- Track 28 : Qobbit_79, Spouty_79
- Track 29 : Vanisoa_76
- Track 30 : Keziacharles14_78
- Track 31 : Toaka_79
- Track 32 : Darrell_79

• Track 33 : SheaKeira_76
• Track 34 : Arissanae_76
• Track 35 : Celestialunch_76
• Track 36 : Elephantoon_81
• Track 37 : Fionnbharth_87, Malthus_88, Ruthiejr_89, Kraw_87, Eponine_89, Wintermute_87, Juliette_89
• Track 38 : Y10_83, JF1_87, Y2_83, YasnayaPolyana_86
• Track 39 : Taquito_87, Nolwazi_89, Mitti_87, Chancellor_87, SamScheppers_86, Lebo14_86, OmniCritical_87, DanSyl44_90

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

The start number called the most often in the published annotations is 29, it was called in 34 of the 96 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Alma_79, Arissanae_76, Ayanochan_78, Beemo_81, BogosyJay_80, Catalina_83, Conquerage_79, EdogawaKiddo_81, Eidsmoe_79, Elephantoon_81, EmyBug_78, ExplosioNervosa_79, Fayely_79, Hanray_81, Holex_81, HortumSL17_82, Jiawan_81, Lilleskat_81, LoneWolf_81, Maminiaina_80, Myxus_81, Onglai_80, PackMan_80, Phaeder_81, Phonnegut_81, Pioneer_81, Priya_79, Qobbit_79, RyeScarlet_81, Sachima_81, Scherzo_79, Spouty_79, Tubs_81, Vanisoa_76,

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

Genes that do not have the "Most Annotated" start:
• Artemis2UCLA_81, BabyBack_74, Bactobuster_71, BennyP_82, BlessJoy_82, Blue7_83, Bradman_81, Caraxes_81, Celestialunch_76, Chancellor_87, Charm_76, DanSyl44_90, Darrell_79, DreamTeam1_76, Eponine_89, Fionnbharth_87, Garak_83, GaugeLDP_73, Helmet_84, Herbertwm_75, Indra_85, IronMan_77, JF1_87, Jaan_77, Journey13_73, Jsquared_82, Juliette_89, Kalpine_81, Keziacharles14_78, Klodlith_77, Koko_83, Kraw_87, Landor_77, Lebo14_86, Lilbunny_81, Malthus_88, MegTheThird_77, Mitti_87, Nolwazi_89, Odin_80, OmniCritical_87, Phaded_74, Pharaoh_74, Quokka_80, Refuge_77, Roksolana_82, Ruthiejr_89, SamScheppers_86, Serenity_82, SheaKeira_76, Superchunk_81, Taquito_87, Temprado_83, TipsytheTRex_78, Toaka_79, ToneTone_79, Tristan_75, Tucker_82, WeiHuaDA_81, Wiks_81, Wintermute_87, WunderPhul_82, Y10_83, Y2_83, YasnayaPolyana_86, Yokurt_81, Zaka_82, Zimmer_77, Zulu_83,

Summary by start number:

Start 21:
• Found in 5 of 103 (4.9%) of genes in pham
• Manual Annotations of this start: 1 of 96
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Phaded_74 (A2),

Start 24:
• Found in 6 of 103 (5.8%) of genes in pham

• Manual Annotations of this start: 3 of 96
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Herbertwm_75 (A2), Journey13_73 (A2), SheaKeira_76 (A9),

Start 25:
• Found in 6 of 103 (5.8%) of genes in pham
• Manual Annotations of this start: 4 of 96
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Celestialunch_76 (A9), Charm_76 (A9), DreamTeam1_76 (A9), Klodlith_77 (A9), MegTheThird_77 (A9), Toaka_79 (A9),

Start 26:
• Found in 19 of 103 (18.4%) of genes in pham
• Manual Annotations of this start: 17 of 96
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Chancellor_87 (K4), DanSyl44_90 (K4), Eponine_89 (K4), Fionnbharth_87 (K4), JF1_87 (K4), Juliette_89 (K4), Kraw_87 (K4), Lebo14_86 (K4), Malthus_88 (K4), Mitti_87 (K4), Nolwazi_89 (K4), OmniCritical_87 (K4), Ruthiejr_89 (K4), SamScheppers_86 (K4), Taquito_87 (K4), Wintermute_87 (K4), Y10_83 (K4), Y2_83 (K4), YasnayaPolyana_86 (K4),

Start 29:
• Found in 34 of 103 (33.0%) of genes in pham
• Manual Annotations of this start: 34 of 96
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alma_79 (A9), Arissanae_76 (A9), Ayanochan_78 (A9), Beemo_81 (A9), BogosyJay_80 (A9), Catalina_83 (A9), Conquerage_79 (A9), EdogawaKiddo_81 (A9), Eidsmoe_79 (A9), Elephantoon_81 (A9), EmyBug_78 (A9), ExplosioNervosa_79 (A9), Fayely_79 (A9), Hanray_81 (A9), Holex_81 (A9), HortumSL17_82 (A9), Jiawan_81 (A9), Lilleskat_81 (A9), LoneWolf_81 (A9), Maminiaina_80 (A9), Myxus_81 (A9), Onglai_80 (A9), PackMan_80 (A9), Phaeder_81 (A9), Phonnegut_81 (A9), Pioneer_81 (A9), Priya_79 (A9), Qobbit_79 (A9), RyeScarlet_81 (A9), Sachima_81 (A9), Scherzo_79 (A9), Spouty_79 (A9), Tubs_81 (A9), Vanisoa_76 (A9),

Start 31:
• Found in 1 of 103 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 96
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Pharaoh_74 (A12),

Start 32:
• Found in 35 of 103 (34.0%) of genes in pham
• Manual Annotations of this start: 31 of 96
• Called 97.1% of time when present
• Phage (with cluster) where this start called: Artemis2UCLA_81 (A6), BabyBack_74 (A2), BennyP_82 (A6), BlessJoy_82 (A6), Blue7_83 (A6), Bradman_81 (A2), Caraxes_81 (A2), Darrell_79 (A9), Garak_83 (A6), GaugeLDP_73 (A2), Helmet_84 (A6), Indra_85 (A6), Jsquared_82 (A2), Kalpine_81 (A2), Keziacharles14_78 (A9), Koko_83 (A6), Lilbunny_81 (A6), Odin_80 (A2), Quokka_80 (A2), Refuge_77 (A12), Roksolana_82 (A6), Serenity_82 (A2), Superchunk_81 (A2), Temprado_83 (A6), TipsytheTRex_78 (A2), ToneTone_79 (A6), Tucker_82 (A6), WeiHuaDA_81 (A2),

Wiks_81 (A6), WunderPhul_82 (A6), Yokurt_81 (A6), Zaka_82 (A6), Zimmer_77 (A12), Zulu_83 (A6),

Start 34:
• Found in 6 of 103 (5.8%) of genes in pham
• Manual Annotations of this start: 5 of 96
• Called 83.3% of time when present
• Phage (with cluster) where this start called: Bactobuster_71 (A2), IronMan_77 (A2), Jaan_77 (A2), Landor_77 (A2), Tristan_75 (A2),

Summary by clusters:

There are 5 clusters represented in this pham: A9, A2, A12, K4, A6,

Info for manual annotations of cluster A12:
•Start number 31 was manually annotated 1 time for cluster A12.
•Start number 32 was manually annotated 2 times for cluster A12.

Info for manual annotations of cluster A2:
•Start number 21 was manually annotated 1 time for cluster A2.
•Start number 24 was manually annotated 2 times for cluster A2.
•Start number 32 was manually annotated 10 times for cluster A2.
•Start number 34 was manually annotated 5 times for cluster A2.

Info for manual annotations of cluster A6:
•Start number 32 was manually annotated 17 times for cluster A6.

Info for manual annotations of cluster A9:
•Start number 24 was manually annotated 1 time for cluster A9.
•Start number 25 was manually annotated 4 times for cluster A9.
•Start number 29 was manually annotated 34 times for cluster A9.
•Start number 32 was manually annotated 2 times for cluster A9.

Info for manual annotations of cluster K4:
•Start number 26 was manually annotated 17 times for cluster K4.

Gene Information:

Gene: Alma_79 Start: 45799, Stop: 45518, Start Num: 29
Candidate Starts for Alma_79:
(5, 45988), (11, 45928), (20, 45877), (Start: 29 @45799 has 34 MA's), (33, 45784), (35, 45775), (44, 45643), (49, 45607), (52, 45568),

Gene: Arissanae_76 Start: 45697, Stop: 45416, Start Num: 29
Candidate Starts for Arissanae_76:
(11, 45826), (20, 45775), (Start: 29 @45697 has 34 MA's), (35, 45673), (39, 45589), (41, 45571), (49, 45505), (52, 45466),

Gene: Artemis2UCLA_81 Start: 45088, Stop: 44819, Start Num: 32
Candidate Starts for Artemis2UCLA_81:
(Start: 32 @45088 has 31 MA's), (36, 45058), (39, 44992), (49, 44908), (53, 44866),

Gene: Ayanochan_78 Start: 45582, Stop: 45301, Start Num: 29
Candidate Starts for Ayanochan_78:
(5, 45771), (11, 45711), (20, 45660), (Start: 29 @45582 has 34 MA's), (33, 45567), (35, 45558), (44, 45426), (49, 45390), (52, 45351),

Gene: BabyBack_74 Start: 46100, Stop: 45831, Start Num: 32
Candidate Starts for BabyBack_74:
(Start: 32 @46100 has 31 MA's), (39, 46004), (42, 45980), (47, 45935), (49, 45920),

Gene: Bactobuster_71 Start: 45904, Stop: 45641, Start Num: 34
Candidate Starts for Bactobuster_71:
(9, 46072), (Start: 21 @45991 has 1 MA's), (30, 45919), (Start: 34 @45904 has 5 MA's), (42, 45790), (49, 45730), (53, 45688),

Gene: Beemo_81 Start: 45795, Stop: 45505, Start Num: 29
Candidate Starts for Beemo_81:
(28, 45798), (Start: 29 @45795 has 34 MA's), (33, 45771), (35, 45762), (38, 45693), (41, 45660), (44, 45630), (49, 45594),

Gene: BennyP_82 Start: 45253, Stop: 44984, Start Num: 32
Candidate Starts for BennyP_82:
(Start: 32 @45253 has 31 MA's), (36, 45223), (39, 45157), (49, 45073), (53, 45031),

Gene: BlessJoy_82 Start: 45609, Stop: 45340, Start Num: 32
Candidate Starts for BlessJoy_82:
(Start: 32 @45609 has 31 MA's), (36, 45579), (39, 45513), (49, 45429), (53, 45387),

Gene: Blue7_83 Start: 45307, Stop: 45038, Start Num: 32
Candidate Starts for Blue7_83:
(Start: 32 @45307 has 31 MA's), (36, 45277), (39, 45211), (49, 45127), (53, 45085),

Gene: BogosyJay_80 Start: 45850, Stop: 45560, Start Num: 29
Candidate Starts for BogosyJay_80:
(28, 45853), (Start: 29 @45850 has 34 MA's), (33, 45826), (35, 45817), (44, 45685), (49, 45649), (52, 45610),

Gene: Bradman_81 Start: 45826, Stop: 45557, Start Num: 32
Candidate Starts for Bradman_81:
(Start: 32 @45826 has 31 MA's), (35, 45814), (36, 45796), (39, 45730), (48, 45649), (53, 45604), (55, 45577), (56, 45571),

Gene: Caraxes_81 Start: 46112, Stop: 45843, Start Num: 32
Candidate Starts for Caraxes_81:
(13, 46223), (Start: 32 @46112 has 31 MA's), (36, 46082), (39, 46016), (49, 45932),

Gene: Catalina_83 Start: 45905, Stop: 45615, Start Num: 29
Candidate Starts for Catalina_83:
(28, 45908), (Start: 29 @45905 has 34 MA's), (33, 45881), (35, 45872), (44, 45740), (49, 45704), (52, 45665),

Gene: Celestialunch_76 Start: 45203, Stop: 44883, Start Num: 25
Candidate Starts for Celestialunch_76:

(8, 45317), (10, 45302), (Start: 25 @45203 has 4 MA's), (38, 45068), (41, 45035), (42, 45029), (49, 44975),

Gene: Chancellor_87 Start: 53125, Stop: 53433, Start Num: 26
Candidate Starts for Chancellor_87:
(Start: 26 @53125 has 17 MA's), (41, 53278), (46, 53317), (47, 53326), (52, 53380), (54, 53389),

Gene: Charm_76 Start: 45350, Stop: 45030, Start Num: 25
Candidate Starts for Charm_76:
(8, 45464), (17, 45410), (Start: 24 @45353 has 3 MA's), (Start: 25 @45350 has 4 MA's), (49, 45122),

Gene: Conquerage_79 Start: 45568, Stop: 45287, Start Num: 29
Candidate Starts for Conquerage_79:
(5, 45757), (11, 45697), (20, 45646), (Start: 29 @45568 has 34 MA's), (33, 45553), (35, 45544), (44, 45412), (49, 45376), (52, 45337),

Gene: DanSyl44_90 Start: 54510, Stop: 54818, Start Num: 26
Candidate Starts for DanSyl44_90:
(Start: 26 @54510 has 17 MA's), (41, 54663), (46, 54702), (47, 54711), (52, 54765), (54, 54774),

Gene: Darrell_79 Start: 45002, Stop: 44733, Start Num: 32
Candidate Starts for Darrell_79:
(6, 45194), (12, 45134), (22, 45083), (Start: 32 @45002 has 31 MA's), (36, 44972), (44, 44858), (49, 44822),

Gene: DreamTeam1_76 Start: 45198, Stop: 44878, Start Num: 25
Candidate Starts for DreamTeam1_76:
(8, 45312), (17, 45258), (Start: 24 @45201 has 3 MA's), (Start: 25 @45198 has 4 MA's), (49, 44970),

Gene: EdogawaKiddo_81 Start: 45873, Stop: 45583, Start Num: 29
Candidate Starts for EdogawaKiddo_81:
(28, 45876), (Start: 29 @45873 has 34 MA's), (33, 45849), (35, 45840), (44, 45708), (49, 45672),

Gene: Eidsmoe_79 Start: 45560, Stop: 45279, Start Num: 29
Candidate Starts for Eidsmoe_79:
(5, 45749), (11, 45689), (20, 45638), (Start: 29 @45560 has 34 MA's), (33, 45545), (35, 45536), (44, 45404), (49, 45368), (52, 45329),

Gene: Elephantoon_81 Start: 45725, Stop: 45444, Start Num: 29
Candidate Starts for Elephantoon_81:
(11, 45854), (20, 45803), (Start: 29 @45725 has 34 MA's), (35, 45701), (39, 45617), (46, 45557), (49, 45533), (52, 45494),

Gene: EmyBug_78 Start: 45562, Stop: 45281, Start Num: 29
Candidate Starts for EmyBug_78:
(5, 45751), (11, 45691), (20, 45640), (Start: 29 @45562 has 34 MA's), (33, 45547), (35, 45538), (44, 45406), (49, 45370), (52, 45331),

Gene: Eponine_89 Start: 54105, Stop: 54413, Start Num: 26
Candidate Starts for Eponine_89:
(Start: 26 @54105 has 17 MA's), (41, 54258), (47, 54306), (54, 54369),

Gene: ExplosioNervosa_79 Start: 45628, Stop: 45347, Start Num: 29

Candidate Starts for ExplosioNervosa_79:
(5, 45817), (11, 45757), (20, 45706), (Start: 29 @45628 has 34 MA's), (33, 45613), (35, 45604), (44, 45472), (49, 45436), (52, 45397),

Gene: Fayely_79 Start: 45538, Stop: 45248, Start Num: 29
Candidate Starts for Fayely_79:
(28, 45541), (Start: 29 @45538 has 34 MA's), (33, 45514), (35, 45505), (38, 45436), (41, 45403), (44, 45373), (49, 45337), (52, 45298),

Gene: Fionnbharth_87 Start: 53503, Stop: 53811, Start Num: 26
Candidate Starts for Fionnbharth_87:
(Start: 26 @53503 has 17 MA's), (41, 53656), (47, 53704), (54, 53767),

Gene: Garak_83 Start: 45550, Stop: 45281, Start Num: 32
Candidate Starts for Garak_83:
(Start: 32 @45550 has 31 MA's), (36, 45520), (39, 45454), (49, 45370), (53, 45328),

Gene: GaugeLDP_73 Start: 45685, Stop: 45416, Start Num: 32
Candidate Starts for GaugeLDP_73:
(Start: 32 @45685 has 31 MA's), (35, 45673), (39, 45589), (42, 45565), (45, 45535), (47, 45520), (49, 45505), (53, 45463),

Gene: Hanray_81 Start: 45849, Stop: 45559, Start Num: 29
Candidate Starts for Hanray_81:
(28, 45852), (Start: 29 @45849 has 34 MA's), (33, 45825), (35, 45816), (38, 45747), (41, 45714), (44, 45684), (49, 45648),

Gene: Helmet_84 Start: 45550, Stop: 45281, Start Num: 32
Candidate Starts for Helmet_84:
(Start: 32 @45550 has 31 MA's), (36, 45520), (39, 45454), (49, 45370), (53, 45328),

Gene: Herbertwm_75 Start: 45969, Stop: 45649, Start Num: 24
Candidate Starts for Herbertwm_75:
(19, 46014), (Start: 24 @45969 has 3 MA's), (27, 45948), (37, 45852), (38, 45834), (49, 45741), (53, 45699), (56, 45666),

Gene: Holex_81 Start: 45865, Stop: 45575, Start Num: 29
Candidate Starts for Holex_81:
(28, 45868), (Start: 29 @45865 has 34 MA's), (33, 45841), (35, 45832), (38, 45763), (41, 45730), (44, 45700), (49, 45664),

Gene: HortumSL17_82 Start: 45903, Stop: 45613, Start Num: 29
Candidate Starts for HortumSL17_82:
(28, 45906), (Start: 29 @45903 has 34 MA's), (33, 45879), (35, 45870), (44, 45738), (49, 45702), (52, 45663),

Gene: Indra_85 Start: 45551, Stop: 45282, Start Num: 32
Candidate Starts for Indra_85:
(Start: 32 @45551 has 31 MA's), (36, 45521), (39, 45455), (49, 45371), (53, 45329),

Gene: IronMan_77 Start: 47577, Stop: 47314, Start Num: 34
Candidate Starts for IronMan_77:
(15, 47697), (23, 47646), (Start: 34 @47577 has 5 MA's), (42, 47463), (49, 47403), (53, 47361),

Gene: JF1_87 Start: 53421, Stop: 53729, Start Num: 26
Candidate Starts for JF1_87:
(Start: 26 @53421 has 17 MA's), (41, 53574), (46, 53613), (47, 53622), (54, 53685),

Gene: Jaan_77 Start: 47534, Stop: 47271, Start Num: 34
Candidate Starts for Jaan_77:
(Start: 21 @47621 has 1 MA's), (30, 47549), (Start: 34 @47534 has 5 MA's), (42, 47420), (49, 47360), (53, 47318),

Gene: Jiawan_81 Start: 45881, Stop: 45591, Start Num: 29
Candidate Starts for Jiawan_81:
(28, 45884), (Start: 29 @45881 has 34 MA's), (33, 45857), (35, 45848), (41, 45746), (44, 45716), (49, 45680),

Gene: Journey13_73 Start: 44569, Stop: 44249, Start Num: 24
Candidate Starts for Journey13_73:
(Start: 24 @44569 has 3 MA's), (40, 44413), (50, 44335), (57, 44257),

Gene: Jsquared_82 Start: 45959, Stop: 45690, Start Num: 32
Candidate Starts for Jsquared_82:
(Start: 32 @45959 has 31 MA's), (36, 45929), (39, 45863), (53, 45737), (56, 45704),

Gene: Juliette_89 Start: 53534, Stop: 53842, Start Num: 26
Candidate Starts for Juliette_89:
(Start: 26 @53534 has 17 MA's), (41, 53687), (47, 53735), (54, 53798),

Gene: Kalpine_81 Start: 47285, Stop: 47016, Start Num: 32
Candidate Starts for Kalpine_81:
(2, 47609), (Start: 32 @47285 has 31 MA's), (36, 47255), (39, 47189), (49, 47105),

Gene: Keziacharles14_78 Start: 46501, Stop: 46232, Start Num: 32
Candidate Starts for Keziacharles14_78:
(14, 46621), (Start: 32 @46501 has 31 MA's), (35, 46489), (39, 46405), (46, 46345), (49, 46321), (50, 46315), (56, 46246),

Gene: Klodlith_77 Start: 45420, Stop: 45100, Start Num: 25
Candidate Starts for Klodlith_77:
(8, 45534), (17, 45480), (Start: 24 @45423 has 3 MA's), (Start: 25 @45420 has 4 MA's), (49, 45192),

Gene: Koko_83 Start: 45940, Stop: 45671, Start Num: 32
Candidate Starts for Koko_83:
(Start: 32 @45940 has 31 MA's), (36, 45910), (39, 45844), (49, 45760), (53, 45718),

Gene: Kraw_87 Start: 53243, Stop: 53551, Start Num: 26
Candidate Starts for Kraw_87:
(Start: 26 @53243 has 17 MA's), (41, 53396), (47, 53444), (54, 53507),

Gene: Landor_77 Start: 47461, Stop: 47198, Start Num: 34
Candidate Starts for Landor_77:
(9, 47629), (Start: 21 @47548 has 1 MA's), (30, 47476), (Start: 34 @47461 has 5 MA's), (42, 47347), (49, 47287), (53, 47245),

Gene: Lebo14_86 Start: 53657, Stop: 53965, Start Num: 26
Candidate Starts for Lebo14_86:
(Start: 26 @53657 has 17 MA's), (41, 53810), (46, 53849), (47, 53858), (52, 53912), (54, 53921),

Gene: Lilbunny_81 Start: 45182, Stop: 44913, Start Num: 32
Candidate Starts for Lilbunny_81:
(Start: 32 @45182 has 31 MA's), (36, 45152), (39, 45086), (49, 45002), (53, 44960),

Gene: Lilleskat_81 Start: 45862, Stop: 45572, Start Num: 29
Candidate Starts for Lilleskat_81:
(28, 45865), (Start: 29 @45862 has 34 MA's), (33, 45838), (35, 45829), (44, 45697), (49, 45661),

Gene: LoneWolf_81 Start: 45915, Stop: 45625, Start Num: 29
Candidate Starts for LoneWolf_81:
(28, 45918), (Start: 29 @45915 has 34 MA's), (33, 45891), (35, 45882), (44, 45750), (49, 45714),

Gene: Malthus_88 Start: 53243, Stop: 53551, Start Num: 26
Candidate Starts for Malthus_88:
(Start: 26 @53243 has 17 MA's), (41, 53396), (47, 53444), (54, 53507),

Gene: Maminiaina_80 Start: 45832, Stop: 45542, Start Num: 29
Candidate Starts for Maminiaina_80:
(28, 45835), (Start: 29 @45832 has 34 MA's), (33, 45808), (35, 45799), (44, 45667), (49, 45631), (52, 45592),

Gene: MegTheThird_77 Start: 45421, Stop: 45101, Start Num: 25
Candidate Starts for MegTheThird_77:
(3, 45652), (8, 45535), (10, 45520), (Start: 25 @45421 has 4 MA's), (38, 45286), (41, 45253), (42, 45247), (47, 45208), (49, 45193),

Gene: Mitti_87 Start: 53399, Stop: 53707, Start Num: 26
Candidate Starts for Mitti_87:
(Start: 26 @53399 has 17 MA's), (41, 53552), (46, 53591), (47, 53600), (52, 53654), (54, 53663),

Gene: Myxus_81 Start: 45903, Stop: 45613, Start Num: 29
Candidate Starts for Myxus_81:
(28, 45906), (Start: 29 @45903 has 34 MA's), (33, 45879), (35, 45870), (44, 45738), (49, 45702), (52, 45663),

Gene: Nolwazi_89 Start: 53458, Stop: 53766, Start Num: 26
Candidate Starts for Nolwazi_89:
(Start: 26 @53458 has 17 MA's), (41, 53611), (46, 53650), (47, 53659), (52, 53713), (54, 53722),

Gene: Odin_80 Start: 46431, Stop: 46162, Start Num: 32
Candidate Starts for Odin_80:
(Start: 32 @46431 has 31 MA's), (36, 46401), (39, 46335), (43, 46308), (53, 46209), (56, 46176),

Gene: OmniCritical_87 Start: 53401, Stop: 53709, Start Num: 26
Candidate Starts for OmniCritical_87:
(Start: 26 @53401 has 17 MA's), (41, 53554), (46, 53593), (47, 53602), (52, 53656), (54, 53665),

Gene: Onglai_80 Start: 44053, Stop: 43763, Start Num: 29
Candidate Starts for Onglai_80:

(28, 44056), (Start: 29 @44053 has 34 MA's), (33, 44029), (35, 44020), (38, 43951), (41, 43918), (44, 43888), (49, 43852),

Gene: PackMan_80 Start: 45778, Stop: 45488, Start Num: 29
Candidate Starts for PackMan_80:
(28, 45781), (Start: 29 @45778 has 34 MA's), (33, 45754), (35, 45745), (44, 45613), (49, 45577), (52, 45538),

Gene: Phaded_74 Start: 47507, Stop: 47157, Start Num: 21
Candidate Starts for Phaded_74:
(9, 47588), (Start: 21 @47507 has 1 MA's), (30, 47435), (Start: 34 @47420 has 5 MA's), (42, 47306), (49, 47246), (53, 47204),

Gene: Phaeder_81 Start: 45778, Stop: 45488, Start Num: 29
Candidate Starts for Phaeder_81:
(28, 45781), (Start: 29 @45778 has 34 MA's), (33, 45754), (35, 45745), (44, 45613), (49, 45577), (52, 45538),

Gene: Pharaoh_74 Start: 45796, Stop: 45521, Start Num: 31
Candidate Starts for Pharaoh_74:
(Start: 31 @45796 has 1 MA's), (Start: 32 @45790 has 31 MA's), (36, 45760), (42, 45670), (44, 45646), (49, 45610), (53, 45568),

Gene: Phonnegut_81 Start: 45794, Stop: 45504, Start Num: 29
Candidate Starts for Phonnegut_81:
(28, 45797), (Start: 29 @45794 has 34 MA's), (33, 45770), (35, 45761), (38, 45692), (41, 45659), (44, 45629), (49, 45593),

Gene: Pioneer_81 Start: 45794, Stop: 45504, Start Num: 29
Candidate Starts for Pioneer_81:
(28, 45797), (Start: 29 @45794 has 34 MA's), (33, 45770), (35, 45761), (38, 45692), (41, 45659), (44, 45629), (49, 45593),

Gene: Priya_79 Start: 45563, Stop: 45282, Start Num: 29
Candidate Starts for Priya_79:
(5, 45752), (11, 45692), (20, 45641), (Start: 29 @45563 has 34 MA's), (33, 45548), (35, 45539), (44, 45407), (49, 45371), (52, 45332),

Gene: Qobbit_79 Start: 45525, Stop: 45244, Start Num: 29
Candidate Starts for Qobbit_79:
(20, 45603), (Start: 29 @45525 has 34 MA's), (33, 45510), (35, 45501), (44, 45369), (49, 45333), (52, 45294),

Gene: Quokka_80 Start: 45827, Stop: 45558, Start Num: 32
Candidate Starts for Quokka_80:
(Start: 32 @45827 has 31 MA's), (35, 45815), (36, 45797), (39, 45731), (48, 45650), (53, 45605), (55, 45578), (56, 45572),

Gene: Refuge_77 Start: 47109, Stop: 46849, Start Num: 32
Candidate Starts for Refuge_77:
(Start: 32 @47109 has 31 MA's), (39, 47013), (42, 46989), (49, 46938), (51, 46920),

Gene: Roksolana_82 Start: 45446, Stop: 45177, Start Num: 32

Candidate Starts for Roksolana_82:
(Start: 32 @45446 has 31 MA's), (36, 45416), (39, 45350), (49, 45266), (53, 45224),

Gene: Ruthiejr_89 Start: 53294, Stop: 53602, Start Num: 26
Candidate Starts for Ruthiejr_89:
(Start: 26 @53294 has 17 MA's), (41, 53447), (47, 53495), (54, 53558),

Gene: RyeScarlet_81 Start: 45769, Stop: 45479, Start Num: 29
Candidate Starts for RyeScarlet_81:
(28, 45772), (Start: 29 @45769 has 34 MA's), (33, 45745), (35, 45736), (38, 45667), (41, 45634), (44, 45604), (49, 45568),

Gene: Sachima_81 Start: 45806, Stop: 45516, Start Num: 29
Candidate Starts for Sachima_81:
(28, 45809), (Start: 29 @45806 has 34 MA's), (33, 45782), (35, 45773), (44, 45641), (49, 45605),

Gene: SamScheppers_86 Start: 53779, Stop: 54087, Start Num: 26
Candidate Starts for SamScheppers_86:
(Start: 26 @53779 has 17 MA's), (41, 53932), (46, 53971), (47, 53980), (52, 54034), (54, 54043),

Gene: Scherzo_79 Start: 45826, Stop: 45536, Start Num: 29
Candidate Starts for Scherzo_79:
(28, 45829), (Start: 29 @45826 has 34 MA's), (33, 45802), (35, 45793), (38, 45724), (41, 45691), (44, 45661), (49, 45625),

Gene: Serenity_82 Start: 46019, Stop: 45750, Start Num: 32
Candidate Starts for Serenity_82:
(Start: 32 @46019 has 31 MA's), (36, 45989), (39, 45923), (48, 45842), (53, 45797), (56, 45764),

Gene: SheaKeira_76 Start: 45229, Stop: 44906, Start Num: 24
Candidate Starts for SheaKeira_76:
(Start: 24 @45229 has 3 MA's), (38, 45091), (49, 44998),

Gene: Spouty_79 Start: 45562, Stop: 45281, Start Num: 29
Candidate Starts for Spouty_79:
(20, 45640), (Start: 29 @45562 has 34 MA's), (33, 45547), (35, 45538), (44, 45406), (49, 45370), (52, 45331),

Gene: Superchunk_81 Start: 46112, Stop: 45843, Start Num: 32
Candidate Starts for Superchunk_81:
(13, 46223), (Start: 32 @46112 has 31 MA's), (36, 46082), (39, 46016), (49, 45932),

Gene: Taquito_87 Start: 53748, Stop: 54056, Start Num: 26
Candidate Starts for Taquito_87:
(Start: 26 @53748 has 17 MA's), (41, 53901), (46, 53940), (47, 53949), (52, 54003), (54, 54012),

Gene: Temprado_83 Start: 45550, Stop: 45281, Start Num: 32
Candidate Starts for Temprado_83:
(Start: 32 @45550 has 31 MA's), (36, 45520), (39, 45454), (49, 45370), (53, 45328),

Gene: TipsytheTRex_78 Start: 46021, Stop: 45752, Start Num: 32
Candidate Starts for TipsytheTRex_78:
(Start: 32 @46021 has 31 MA's), (36, 45991), (39, 45925), (48, 45844), (53, 45799), (56, 45766),

Gene: Toaka_79 Start: 45790, Stop: 45470, Start Num: 25
Candidate Starts for Toaka_79:
(8, 45904), (10, 45889), (Start: 25 @45790 has 4 MA's), (37, 45673), (41, 45622), (49, 45562),

Gene: ToneTone_79 Start: 45110, Stop: 44841, Start Num: 32
Candidate Starts for ToneTone_79:
(Start: 32 @45110 has 31 MA's), (36, 45080), (39, 45014), (49, 44930), (53, 44888),

Gene: Tristan_75 Start: 47271, Stop: 47008, Start Num: 34
Candidate Starts for Tristan_75:
(Start: 21 @47358 has 1 MA's), (30, 47286), (Start: 34 @47271 has 5 MA's), (42, 47157), (49, 47097), (53, 47055),

Gene: Tubs_81 Start: 45778, Stop: 45488, Start Num: 29
Candidate Starts for Tubs_81:
(28, 45781), (Start: 29 @45778 has 34 MA's), (33, 45754), (35, 45745), (44, 45613), (49, 45577), (52, 45538),

Gene: Tucker_82 Start: 45313, Stop: 45044, Start Num: 32
Candidate Starts for Tucker_82:
(Start: 32 @45313 has 31 MA's), (36, 45283), (39, 45217), (49, 45133), (53, 45091),

Gene: Vanisoa_76 Start: 46019, Stop: 45729, Start Num: 29
Candidate Starts for Vanisoa_76:
(1, 46394), (11, 46148), (20, 46097), (Start: 29 @46019 has 34 MA's), (35, 45986), (39, 45902), (41, 45884), (44, 45854), (49, 45818),

Gene: WeiHuaDA_81 Start: 47572, Stop: 47303, Start Num: 32
Candidate Starts for WeiHuaDA_81:
(Start: 32 @47572 has 31 MA's), (36, 47542), (39, 47476), (49, 47392),

Gene: Wiks_81 Start: 45181, Stop: 44912, Start Num: 32
Candidate Starts for Wiks_81:
(Start: 32 @45181 has 31 MA's), (36, 45151), (39, 45085), (49, 45001), (53, 44959),

Gene: Wintermute_87 Start: 53471, Stop: 53779, Start Num: 26
Candidate Starts for Wintermute_87:
(Start: 26 @53471 has 17 MA's), (41, 53624), (47, 53672), (54, 53735),

Gene: WunderPhul_82 Start: 45179, Stop: 44910, Start Num: 32
Candidate Starts for WunderPhul_82:
(Start: 32 @45179 has 31 MA's), (36, 45149), (39, 45083), (49, 44999), (53, 44957),

Gene: Y10_83 Start: 53421, Stop: 53729, Start Num: 26
Candidate Starts for Y10_83:
(Start: 26 @53421 has 17 MA's), (41, 53574), (46, 53613), (47, 53622), (54, 53685),

Gene: Y2_83 Start: 53421, Stop: 53729, Start Num: 26
Candidate Starts for Y2_83:
(Start: 26 @53421 has 17 MA's), (41, 53574), (46, 53613), (47, 53622), (54, 53685),

Gene: YasnayaPolyana_86 Start: 53407, Stop: 53715, Start Num: 26

Candidate Starts for YasnayaPolyana_86:
(Start: 26 @53407 has 17 MA's), (41, 53560), (46, 53599), (47, 53608), (54, 53671),

Gene: Yokurt_81 Start: 45181, Stop: 44912, Start Num: 32
Candidate Starts for Yokurt_81:
(Start: 32 @45181 has 31 MA's), (36, 45151), (39, 45085), (49, 45001), (53, 44959),

Gene: Zaka_82 Start: 45181, Stop: 44912, Start Num: 32
Candidate Starts for Zaka_82:
(Start: 32 @45181 has 31 MA's), (36, 45151), (39, 45085), (49, 45001), (53, 44959),

Gene: Zimmer_77 Start: 46661, Stop: 46392, Start Num: 32
Candidate Starts for Zimmer_77:
(4, 46880), (7, 46832), (16, 46775), (18, 46760), (Start: 32 @46661 has 31 MA's), (36, 46631), (39, 46565), (49, 46481), (53, 46439),

Gene: Zulu_83 Start: 45559, Stop: 45290, Start Num: 32
Candidate Starts for Zulu_83:
(Start: 32 @45559 has 31 MA's), (36, 45529), (39, 45463), (49, 45379), (53, 45337),