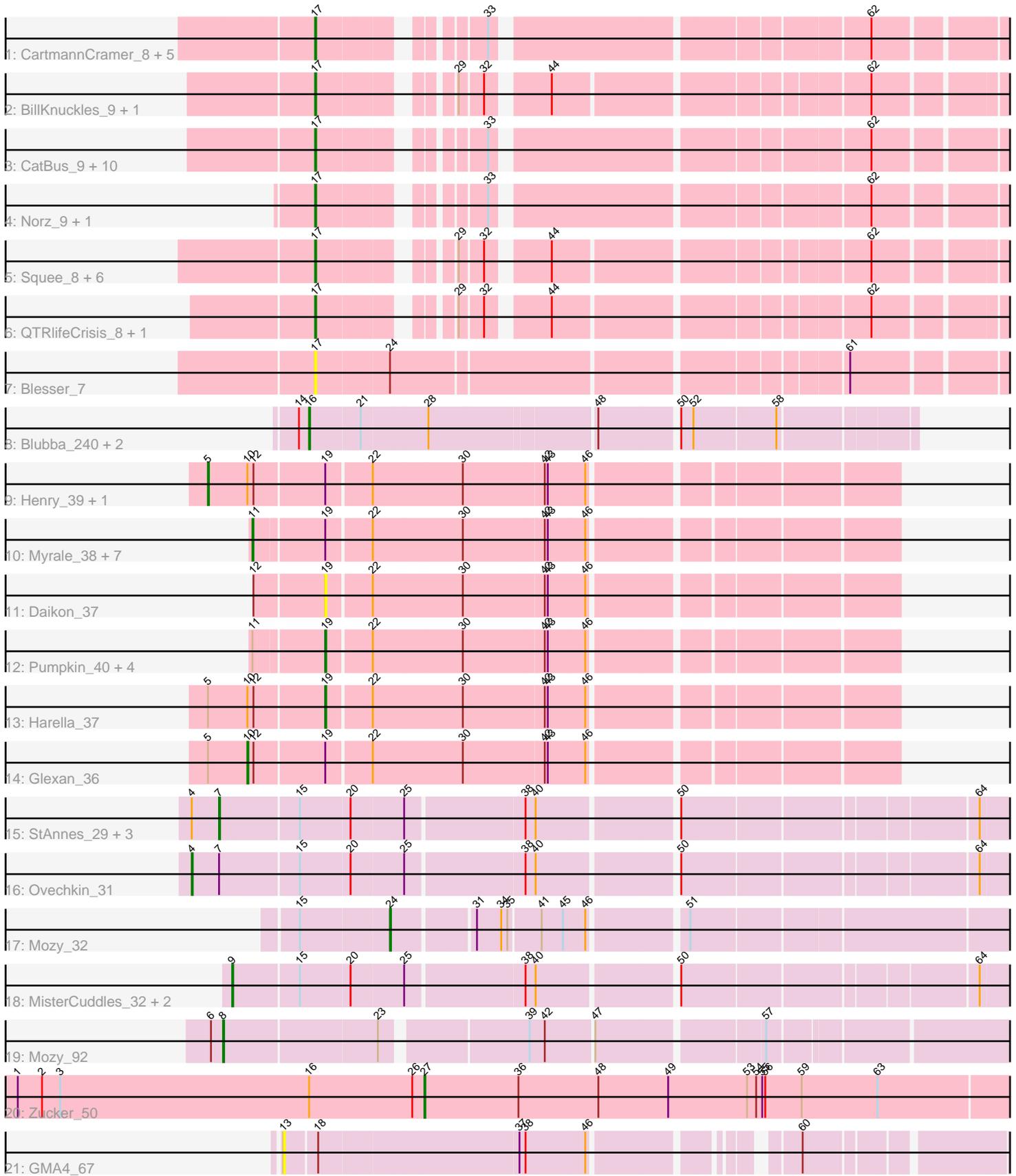Pham 283799

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 283799 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283799 has 64 members, 12 are drafts.

Phages represented in each track:
• Track 1 : CartmannCramer_8, Papez_9, PowerRanger_8, TheloniousMonk_9, LilBib_8, Kenmech_10
• Track 2 : BillKnuckles_9, DD5_9
• Track 3 : CatBus_9, Hermia_10, GroundGoblin_9, Buttons_9, Aldrich_9, DirtDevil_9, Noxious_9, KikiBouba_9, SpikeBT_9, Edtherson_9, Treddle_9
• Track 4 : Norz_9, Monet_9
• Track 5 : Squee_8, Gwendoluna_9, KBG_9, Solon_8, Graduation_10, Nerujay_9, Whitspit_9
• Track 6 : QTRlifeCrisis_8, Zeuska_8
• Track 7 : Blesser_7
• Track 8 : Blubba_240, Colt_243, Cane17_242
• Track 9 : Henry_39, Gator_36
• Track 10 : Myrale_38, ABCat_37, Tuco_39, DrDrey_39, ShamWow_38, Dusk_37, BilboSwaggins_38, BadStone_37
• Track 11 : Daikon_37
• Track 12 : Pumpkin_40, Marshmallow_38, Toto_38, Teaspoon_39, Balomoji_37
• Track 13 : Harella_37
• Track 14 : Glexan_36
• Track 15 : StAnnes_29, Soul22_35, Hamulus_31, Kingsley_29
• Track 16 : Ovechkin_31
• Track 17 : Mozy_32
• Track 18 : MisterCuddles_32, Girr_32, Ruby_32
• Track 19 : Mozy_92
• Track 20 : Zucker_50
• Track 21 : GMA4_67

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

The start number called the most often in the published annotations is 17, it was called in 21 of the 52 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aldrich_9, BillKnuckles_9, Blesser_7, Buttons_9, CartmannCramer_8, CatBus_9, DD5_9, DirtDevil_9, Edtherson_9, Graduation_10, GroundGoblin_9, Gwendoluna_9,

Hermia_10, KBG_9, Kenmech_10, KikiBouba_9, LilBib_8, Monet_9, Nerujay_9, Norz_9, Noxious_9, Papez_9, PowerRanger_8, QTRlifeCrisis_8, Solon_8, SpikeBT_9, Squee_8, TheloniousMonk_9, Treddle_9, Whitspit_9, Zeuska_8,

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

Genes that do not have the "Most Annotated" start:
• ABCat_37, BadStone_37, Balomoji_37, BilboSwaggins_38, Blubba_240, Cane17_242, Colt_243, Daikon_37, DrDrey_39, Dusk_37, GMA4_67, Gator_36, Girr_32, Glexan_36, Hamulus_31, Harella_37, Henry_39, Kingsley_29, Marshmallow_38, MisterCuddles_32, Mozy_32, Mozy_92, Myrale_38, Ovechkin_31, Pumpkin_40, Ruby_32, ShamWow_38, Soul22_35, StAnnes_29, Teaspoon_39, Toto_38, Tuco_39, Zucker_50,

Summary by start number:

Start 4:
• Found in 5 of 64 (7.8%) of genes in pham
• Manual Annotations of this start: 1 of 52
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Ovechkin_31 (F1),

Start 5:
• Found in 4 of 64 (6.2%) of genes in pham
• Manual Annotations of this start: 2 of 52
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Gator_36 (E), Henry_39 (E),

Start 7:
• Found in 5 of 64 (7.8%) of genes in pham
• Manual Annotations of this start: 4 of 52
• Called 80.0% of time when present
• Phage (with cluster) where this start called: Hamulus_31 (F1), Kingsley_29 (F1), Soul22_35 (F2), StAnnes_29 (F1),

Start 8:
• Found in 1 of 64 (1.6%) of genes in pham
• Manual Annotations of this start: 1 of 52
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Mozy_92 (F1),

Start 9:
• Found in 3 of 64 (4.7%) of genes in pham
• Manual Annotations of this start: 3 of 52
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Girr_32 (F1), MisterCuddles_32 (F1), Ruby_32 (F1),

Start 10:
• Found in 4 of 64 (6.2%) of genes in pham
• Manual Annotations of this start: 1 of 52
• Called 25.0% of time when present

• Phage (with cluster) where this start called: Glexan_36 (E),

Start 11:
• Found in 13 of 64 (20.3%) of genes in pham
• Manual Annotations of this start: 8 of 52
• Called 61.5% of time when present
• Phage (with cluster) where this start called: ABCat_37 (E), BadStone_37 (E), BilboSwaggins_38 (E), DrDrey_39 (E), Dusk_37 (E), Myrale_38 (E), ShamWow_38 (E), Tuco_39 (E),

Start 13:
• Found in 1 of 64 (1.6%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: GMA4_67 (singleton),

Start 16:
• Found in 4 of 64 (6.2%) of genes in pham
• Manual Annotations of this start: 3 of 52
• Called 75.0% of time when present
• Phage (with cluster) where this start called: Blubba_240 (C1), Cane17_242 (C1), Colt_243 (C1),

Start 17:
• Found in 31 of 64 (48.4%) of genes in pham
• Manual Annotations of this start: 21 of 52
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aldrich_9 (A1), BillKnuckles_9 (A1), Blesser_7 (A1), Buttons_9 (A1), CartmannCramer_8 (A1), CatBus_9 (A1), DD5_9 (A1), DirtDevil_9 (A1), Edtherson_9 (A1), Graduation_10 (A1), GroundGoblin_9 (A1), Gwendoluna_9 (A1), Hermia_10 (A1), KBG_9 (A1), Kenmech_10 (A1), KikiBouba_9 (A1), LilBib_8 (A1), Monet_9 (A1), Nerujay_9 (A1), Norz_9 (A1), Noxious_9 (A1), Papez_9 (A1), PowerRanger_8 (A1), QTRlifeCrisis_8 (A1), Solon_8 (A1), SpikeBT_9 (A1), Squee_8 (A1), TheloniousMonk_9 (A1), Treddle_9 (A1), Whitspit_9 (A1), Zeuska_8 (A1),

Start 19:
• Found in 18 of 64 (28.1%) of genes in pham
• Manual Annotations of this start: 6 of 52
• Called 38.9% of time when present
• Phage (with cluster) where this start called: Balomoji_37 (E), Daikon_37 (E), Harella_37 (E), Marshmallow_38 (E), Pumpkin_40 (E), Teaspoon_39 (E), Toto_38 (E),

Start 24:
• Found in 2 of 64 (3.1%) of genes in pham
• Manual Annotations of this start: 1 of 52
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Mozy_32 (F1),

Start 27:
• Found in 1 of 64 (1.6%) of genes in pham
• Manual Annotations of this start: 1 of 52

• Called 100.0% of time when present
• Phage (with cluster) where this start called: Zucker_50 (FN),

Summary by clusters:

There are 7 clusters represented in this pham: F1, singleton, E, F2, A1, C1, FN,

Info for manual annotations of cluster A1:
•Start number 17 was manually annotated 21 times for cluster A1.

Info for manual annotations of cluster C1:
•Start number 16 was manually annotated 3 times for cluster C1.

Info for manual annotations of cluster E:
•Start number 5 was manually annotated 2 times for cluster E.
•Start number 10 was manually annotated 1 time for cluster E.
•Start number 11 was manually annotated 8 times for cluster E.
•Start number 19 was manually annotated 6 times for cluster E.

Info for manual annotations of cluster F1:
•Start number 4 was manually annotated 1 time for cluster F1.
•Start number 7 was manually annotated 3 times for cluster F1.
•Start number 8 was manually annotated 1 time for cluster F1.
•Start number 9 was manually annotated 3 times for cluster F1.
•Start number 24 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:
•Start number 7 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster FN:
•Start number 27 was manually annotated 1 time for cluster FN.

Gene Information:
Gene: ABCat_37 Start: 34121, Stop: 33534, Start Num: 11
Candidate Starts for ABCat_37:
(Start: 11 @34121 has 8 MA's), (Start: 19 @34055 has 6 MA's), (22, 34013), (30, 33926), (42, 33848), (43, 33845), (46, 33809),

Gene: Aldrich_9 Start: 4591, Stop: 5169, Start Num: 17
Candidate Starts for Aldrich_9:
(Start: 17 @4591 has 21 MA's), (33, 4717), (62, 5050),

Gene: BadStone_37 Start: 34121, Stop: 33534, Start Num: 11
Candidate Starts for BadStone_37:
(Start: 11 @34121 has 8 MA's), (Start: 19 @34055 has 6 MA's), (22, 34013), (30, 33926), (42, 33848), (43, 33845), (46, 33809),

Gene: Balomoji_37 Start: 33789, Stop: 33268, Start Num: 19
Candidate Starts for Balomoji_37:

(Start: 11 @33855 has 8 MA's), (Start: 19 @33789 has 6 MA's), (22, 33747), (30, 33660), (42, 33582), (43, 33579), (46, 33543),

Gene: BilboSwaggins_38 Start: 34129, Stop: 33542, Start Num: 11
Candidate Starts for BilboSwaggins_38:
(Start: 11 @34129 has 8 MA's), (Start: 19 @34063 has 6 MA's), (22, 34021), (30, 33934), (42, 33856), (43, 33853), (46, 33817),

Gene: BillKnuckles_9 Start: 4709, Stop: 5290, Start Num: 17
Candidate Starts for BillKnuckles_9:
(Start: 17 @4709 has 21 MA's), (29, 4811), (32, 4832), (44, 4880), (62, 5159),

Gene: Blesser_7 Start: 4048, Stop: 4662, Start Num: 17
Candidate Starts for Blesser_7:
(Start: 17 @4048 has 21 MA's), (Start: 24 @4117 has 1 MA's), (61, 4522),

Gene: Blubba_240 Start: 148292, Stop: 148846, Start Num: 16
Candidate Starts for Blubba_240:
(14, 148286), (Start: 16 @148292 has 3 MA's), (21, 148340), (28, 148403), (48, 148559), (50, 148631), (52, 148643), (58, 148721),

Gene: Buttons_9 Start: 4220, Stop: 4798, Start Num: 17
Candidate Starts for Buttons_9:
(Start: 17 @4220 has 21 MA's), (33, 4346), (62, 4679),

Gene: Cane17_242 Start: 148701, Stop: 149255, Start Num: 16
Candidate Starts for Cane17_242:
(14, 148695), (Start: 16 @148701 has 3 MA's), (21, 148749), (28, 148812), (48, 148968), (50, 149040), (52, 149052), (58, 149130),

Gene: CartmannCramer_8 Start: 4548, Stop: 5126, Start Num: 17
Candidate Starts for CartmannCramer_8:
(Start: 17 @4548 has 21 MA's), (33, 4674), (62, 5007),

Gene: CatBus_9 Start: 4783, Stop: 5361, Start Num: 17
Candidate Starts for CatBus_9:
(Start: 17 @4783 has 21 MA's), (33, 4909), (62, 5242),

Gene: Colt_243 Start: 147893, Stop: 148447, Start Num: 16
Candidate Starts for Colt_243:
(14, 147887), (Start: 16 @147893 has 3 MA's), (21, 147941), (28, 148004), (48, 148160), (50, 148232), (52, 148244), (58, 148322),

Gene: DD5_9 Start: 4751, Stop: 5332, Start Num: 17
Candidate Starts for DD5_9:
(Start: 17 @4751 has 21 MA's), (29, 4853), (32, 4874), (44, 4922), (62, 5201),

Gene: Daikon_37 Start: 33801, Stop: 33280, Start Num: 19
Candidate Starts for Daikon_37:
(12, 33867), (Start: 19 @33801 has 6 MA's), (22, 33759), (30, 33672), (42, 33594), (43, 33591), (46, 33555),

Gene: DirtDevil_9 Start: 4591, Stop: 5169, Start Num: 17

Candidate Starts for DirtDevil_9:
(Start: 17 @4591 has 21 MA's), (33, 4717), (62, 5050),

Gene: DrDrey_39 Start: 34621, Stop: 34034, Start Num: 11
Candidate Starts for DrDrey_39:
(Start: 11 @34621 has 8 MA's), (Start: 19 @34555 has 6 MA's), (22, 34513), (30, 34426), (42, 34348), (43, 34345), (46, 34309),

Gene: Dusk_37 Start: 33781, Stop: 33194, Start Num: 11
Candidate Starts for Dusk_37:
(Start: 11 @33781 has 8 MA's), (Start: 19 @33715 has 6 MA's), (22, 33673), (30, 33586), (42, 33508), (43, 33505), (46, 33469),

Gene: Edtherson_9 Start: 4530, Stop: 5108, Start Num: 17
Candidate Starts for Edtherson_9:
(Start: 17 @4530 has 21 MA's), (33, 4656), (62, 4989),

Gene: GMA4_67 Start: 43840, Stop: 44490, Start Num: 13
Candidate Starts for GMA4_67:
(13, 43840), (18, 43870), (37, 44059), (38, 44065), (46, 44122), (60, 44284),

Gene: Gator_36 Start: 33782, Stop: 33150, Start Num: 5
Candidate Starts for Gator_36:
(Start: 5 @33782 has 2 MA's), (Start: 10 @33743 has 1 MA's), (12, 33737), (Start: 19 @33671 has 6 MA's), (22, 33629), (30, 33542), (42, 33464), (43, 33461), (46, 33425),

Gene: Girr_32 Start: 27712, Stop: 28464, Start Num: 9
Candidate Starts for Girr_32:
(Start: 9 @27712 has 3 MA's), (15, 27775), (20, 27823), (25, 27871), (38, 27982), (40, 27991), (50, 28117), (64, 28384),

Gene: Glexan_36 Start: 33731, Stop: 33138, Start Num: 10
Candidate Starts for Glexan_36:
(Start: 5 @33770 has 2 MA's), (Start: 10 @33731 has 1 MA's), (12, 33725), (Start: 19 @33659 has 6 MA's), (22, 33617), (30, 33530), (42, 33452), (43, 33449), (46, 33413),

Gene: Graduation_10 Start: 4816, Stop: 5397, Start Num: 17
Candidate Starts for Graduation_10:
(Start: 17 @4816 has 21 MA's), (29, 4918), (32, 4939), (44, 4987), (62, 5266),

Gene: GroundGoblin_9 Start: 4591, Stop: 5169, Start Num: 17
Candidate Starts for GroundGoblin_9:
(Start: 17 @4591 has 21 MA's), (33, 4717), (62, 5050),

Gene: Gwendoluna_9 Start: 4700, Stop: 5281, Start Num: 17
Candidate Starts for Gwendoluna_9:
(Start: 17 @4700 has 21 MA's), (29, 4802), (32, 4823), (44, 4871), (62, 5150),

Gene: Hamulus_31 Start: 27654, Stop: 28418, Start Num: 7
Candidate Starts for Hamulus_31:
(Start: 4 @27627 has 1 MA's), (Start: 7 @27654 has 4 MA's), (15, 27729), (20, 27777), (25, 27825), (38, 27936), (40, 27945), (50, 28071), (64, 28338),

Gene: Harella_37 Start: 34175, Stop: 33654, Start Num: 19
Candidate Starts for Harella_37:
(Start: 5 @34286 has 2 MA's), (Start: 10 @34247 has 1 MA's), (12, 34241), (Start: 19 @34175 has 6 MA's), (22, 34133), (30, 34046), (42, 33968), (43, 33965), (46, 33929),

Gene: Henry_39 Start: 34174, Stop: 33542, Start Num: 5
Candidate Starts for Henry_39:
(Start: 5 @34174 has 2 MA's), (Start: 10 @34135 has 1 MA's), (12, 34129), (Start: 19 @34063 has 6 MA's), (22, 34021), (30, 33934), (42, 33856), (43, 33853), (46, 33817),

Gene: Hermia_10 Start: 4783, Stop: 5361, Start Num: 17
Candidate Starts for Hermia_10:
(Start: 17 @4783 has 21 MA's), (33, 4909), (62, 5242),

Gene: KBG_9 Start: 4959, Stop: 5540, Start Num: 17
Candidate Starts for KBG_9:
(Start: 17 @4959 has 21 MA's), (29, 5061), (32, 5082), (44, 5130), (62, 5409),

Gene: Kenmech_10 Start: 4617, Stop: 5195, Start Num: 17
Candidate Starts for Kenmech_10:
(Start: 17 @4617 has 21 MA's), (33, 4743), (62, 5076),

Gene: KikiBouba_9 Start: 4592, Stop: 5170, Start Num: 17
Candidate Starts for KikiBouba_9:
(Start: 17 @4592 has 21 MA's), (33, 4718), (62, 5051),

Gene: Kingsley_29 Start: 26483, Stop: 27247, Start Num: 7
Candidate Starts for Kingsley_29:
(Start: 4 @26456 has 1 MA's), (Start: 7 @26483 has 4 MA's), (15, 26558), (20, 26606), (25, 26654), (38, 26765), (40, 26774), (50, 26900), (64, 27167),

Gene: LilBib_8 Start: 4381, Stop: 4959, Start Num: 17
Candidate Starts for LilBib_8:
(Start: 17 @4381 has 21 MA's), (33, 4507), (62, 4840),

Gene: Marshmallow_38 Start: 34061, Stop: 33540, Start Num: 19
Candidate Starts for Marshmallow_38:
(Start: 11 @34127 has 8 MA's), (Start: 19 @34061 has 6 MA's), (22, 34019), (30, 33932), (42, 33854), (43, 33851), (46, 33815),

Gene: MisterCuddles_32 Start: 27712, Stop: 28464, Start Num: 9
Candidate Starts for MisterCuddles_32:
(Start: 9 @27712 has 3 MA's), (15, 27775), (20, 27823), (25, 27871), (38, 27982), (40, 27991), (50, 28117), (64, 28384),

Gene: Monet_9 Start: 4498, Stop: 5076, Start Num: 17
Candidate Starts for Monet_9:
(Start: 17 @4498 has 21 MA's), (33, 4624), (62, 4957),

Gene: Mozy_32 Start: 27800, Stop: 28405, Start Num: 24
Candidate Starts for Mozy_32:
(15, 27716), (Start: 24 @27800 has 1 MA's), (31, 27872), (34, 27896), (35, 27902), (41, 27932), (45, 27953), (46, 27974), (51, 28061),

Gene: Mozy_92 Start: 49652, Stop: 50401, Start Num: 8
Candidate Starts for Mozy_92:
(6, 49640), (Start: 8 @49652 has 1 MA's), (23, 49799), (39, 49931), (42, 49946), (47, 49991), (57, 50144),

Gene: Myrale_38 Start: 33992, Stop: 33405, Start Num: 11
Candidate Starts for Myrale_38:
(Start: 11 @33992 has 8 MA's), (Start: 19 @33926 has 6 MA's), (22, 33884), (30, 33797), (42, 33719), (43, 33716), (46, 33680),

Gene: Nerujay_9 Start: 4453, Stop: 5034, Start Num: 17
Candidate Starts for Nerujay_9:
(Start: 17 @4453 has 21 MA's), (29, 4555), (32, 4576), (44, 4624), (62, 4903),

Gene: Norz_9 Start: 4534, Stop: 5112, Start Num: 17
Candidate Starts for Norz_9:
(Start: 17 @4534 has 21 MA's), (33, 4660), (62, 4993),

Gene: Noxious_9 Start: 4783, Stop: 5361, Start Num: 17
Candidate Starts for Noxious_9:
(Start: 17 @4783 has 21 MA's), (33, 4909), (62, 5242),

Gene: Ovechkin_31 Start: 27645, Stop: 28436, Start Num: 4
Candidate Starts for Ovechkin_31:
(Start: 4 @27645 has 1 MA's), (Start: 7 @27672 has 4 MA's), (15, 27747), (20, 27795), (25, 27843), (38, 27954), (40, 27963), (50, 28089), (64, 28356),

Gene: Papez_9 Start: 5271, Stop: 5849, Start Num: 17
Candidate Starts for Papez_9:
(Start: 17 @5271 has 21 MA's), (33, 5397), (62, 5730),

Gene: PowerRanger_8 Start: 4332, Stop: 4910, Start Num: 17
Candidate Starts for PowerRanger_8:
(Start: 17 @4332 has 21 MA's), (33, 4458), (62, 4791),

Gene: Pumpkin_40 Start: 34140, Stop: 33619, Start Num: 19
Candidate Starts for Pumpkin_40:
(Start: 11 @34206 has 8 MA's), (Start: 19 @34140 has 6 MA's), (22, 34098), (30, 34011), (42, 33933), (43, 33930), (46, 33894),

Gene: QTRlifeCrisis_8 Start: 4494, Stop: 5075, Start Num: 17
Candidate Starts for QTRlifeCrisis_8:
(Start: 17 @4494 has 21 MA's), (29, 4596), (32, 4617), (44, 4665), (62, 4944),

Gene: Ruby_32 Start: 27712, Stop: 28464, Start Num: 9
Candidate Starts for Ruby_32:
(Start: 9 @27712 has 3 MA's), (15, 27775), (20, 27823), (25, 27871), (38, 27982), (40, 27991), (50, 28117), (64, 28384),

Gene: ShamWow_38 Start: 34129, Stop: 33542, Start Num: 11
Candidate Starts for ShamWow_38:

(Start: 11 @34129 has 8 MA's), (Start: 19 @34063 has 6 MA's), (22, 34021), (30, 33934), (42, 33856), (43, 33853), (46, 33817),

Gene: Solon_8 Start: 4653, Stop: 5234, Start Num: 17
Candidate Starts for Solon_8:
(Start: 17 @4653 has 21 MA's), (29, 4755), (32, 4776), (44, 4824), (62, 5103),

Gene: Soul22_35 Start: 27040, Stop: 27804, Start Num: 7
Candidate Starts for Soul22_35:
(Start: 4 @27013 has 1 MA's), (Start: 7 @27040 has 4 MA's), (15, 27115), (20, 27163), (25, 27211), (38, 27322), (40, 27331), (50, 27457), (64, 27724),

Gene: SpikeBT_9 Start: 4433, Stop: 5011, Start Num: 17
Candidate Starts for SpikeBT_9:
(Start: 17 @4433 has 21 MA's), (33, 4559), (62, 4892),

Gene: Squee_8 Start: 4160, Stop: 4741, Start Num: 17
Candidate Starts for Squee_8:
(Start: 17 @4160 has 21 MA's), (29, 4262), (32, 4283), (44, 4331), (62, 4610),

Gene: StAnnes_29 Start: 27239, Stop: 28003, Start Num: 7
Candidate Starts for StAnnes_29:
(Start: 4 @27212 has 1 MA's), (Start: 7 @27239 has 4 MA's), (15, 27314), (20, 27362), (25, 27410), (38, 27521), (40, 27530), (50, 27656), (64, 27923),

Gene: Teaspoon_39 Start: 34016, Stop: 33495, Start Num: 19
Candidate Starts for Teaspoon_39:
(Start: 11 @34082 has 8 MA's), (Start: 19 @34016 has 6 MA's), (22, 33974), (30, 33887), (42, 33809), (43, 33806), (46, 33770),

Gene: TheloniousMonk_9 Start: 4484, Stop: 5062, Start Num: 17
Candidate Starts for TheloniousMonk_9:
(Start: 17 @4484 has 21 MA's), (33, 4610), (62, 4943),

Gene: Toto_38 Start: 34063, Stop: 33542, Start Num: 19
Candidate Starts for Toto_38:
(Start: 11 @34129 has 8 MA's), (Start: 19 @34063 has 6 MA's), (22, 34021), (30, 33934), (42, 33856), (43, 33853), (46, 33817),

Gene: Treddle_9 Start: 4499, Stop: 5077, Start Num: 17
Candidate Starts for Treddle_9:
(Start: 17 @4499 has 21 MA's), (33, 4625), (62, 4958),

Gene: Tuco_39 Start: 34637, Stop: 34050, Start Num: 11
Candidate Starts for Tuco_39:
(Start: 11 @34637 has 8 MA's), (Start: 19 @34571 has 6 MA's), (22, 34529), (30, 34442), (42, 34364), (43, 34361), (46, 34325),

Gene: Whitspit_9 Start: 4658, Stop: 5239, Start Num: 17
Candidate Starts for Whitspit_9:
(Start: 17 @4658 has 21 MA's), (29, 4760), (32, 4781), (44, 4829), (62, 5108),

Gene: Zeuska_8 Start: 4378, Stop: 4959, Start Num: 17

Candidate Starts for Zeuska_8:
(Start: 17 @4378 has 21 MA's), (29, 4480), (32, 4501), (44, 4549), (62, 4828),

Gene: Zucker_50 Start: 32261, Stop: 32884, Start Num: 27
Candidate Starts for Zucker_50:
(1, 31859), (2, 31883), (3, 31901), (Start: 16 @32147 has 3 MA's), (26, 32249), (Start: 27 @32261 has 1 MA's), (36, 32354), (48, 32432), (49, 32501), (53, 32579), (54, 32588), (55, 32594), (56, 32597), (59, 32633), (63, 32708),