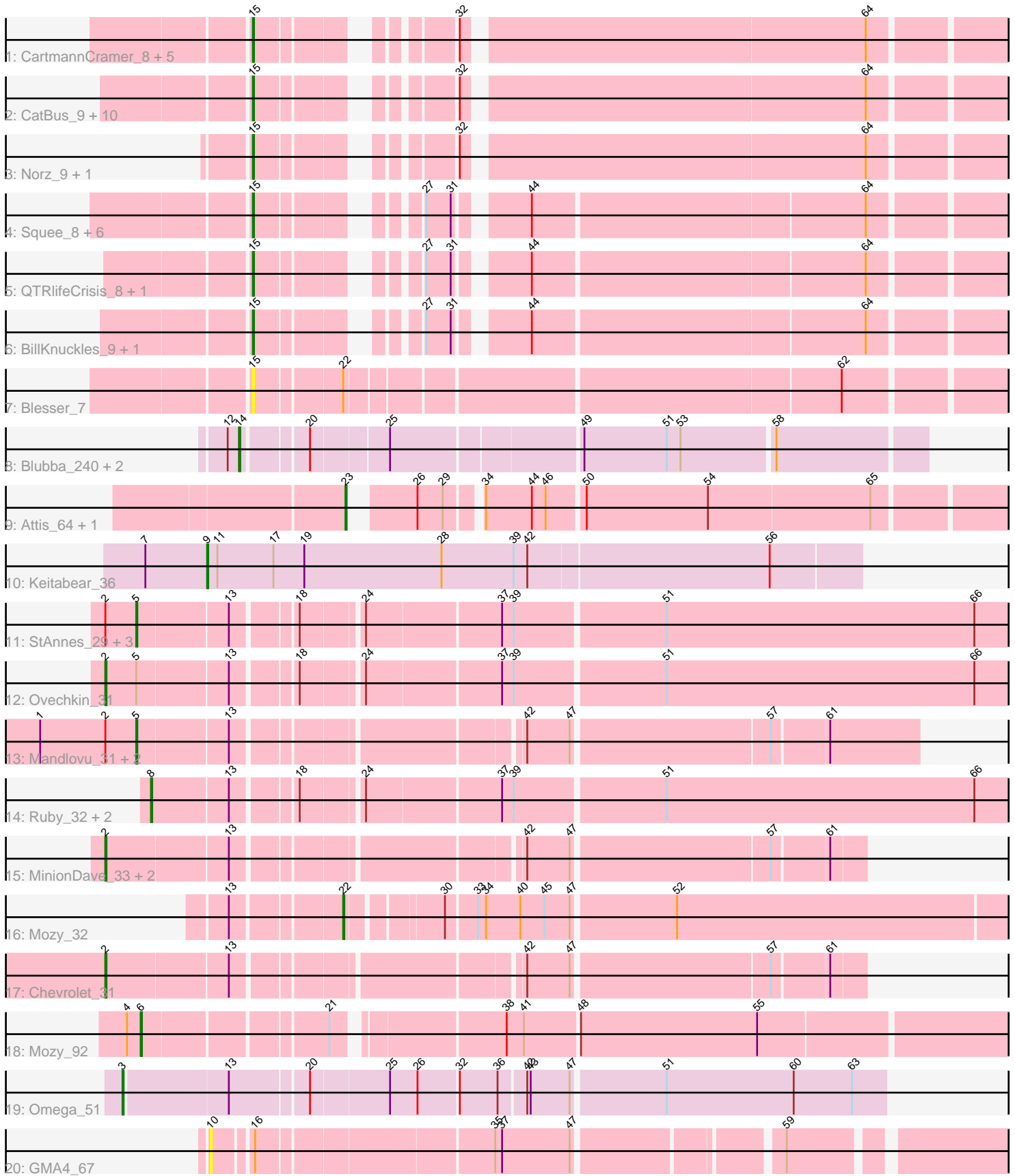


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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. 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 294772 Report

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

Pham number 294772 has 56 members, 11 are drafts.

Phages represented in each track:

- Track 1 : CartmannCramer\_8, Papez\_9, PowerRanger\_8, TheloniousMonk\_9, LilBib\_8, Kenmech\_10
- Track 2 : CatBus\_9, Hermia\_10, GroundGoblin\_9, Buttons\_9, DirtDevil\_9, Edtherson\_9, Noxious\_9, Aldrich\_9, KikiBouba\_9, SpikeBT\_9, Treddle\_9
- Track 3 : Norz\_9, Monet\_9
- Track 4 : Squee\_8, Gwendoluna\_9, KBG\_9, Graduation\_10, Solon\_8, Nerujay\_9, Whitspit\_9
- Track 5 : QTRlifeCrisis\_8, Zeuska\_8
- Track 6 : BillKnuckles\_9, DD5\_9
- Track 7 : Blesser\_7
- Track 8 : Blubba\_240, Colt\_243, Cane17\_242
- Track 9 : Attis\_64, SoilAssassin\_64
- Track 10 : Keitabear\_36
- Track 11 : StAnnes\_29, Soul22\_35, Hamulus\_31, Kingsley\_29
- Track 12 : Ovechkin\_31
- Track 13 : Mandlovu\_31, Hlubikazi\_31, Strokeseat\_31
- Track 14 : Ruby\_32, MisterCuddles\_32, Girr\_32
- Track 15 : MinionDave\_33, Ramsey\_33, Galactic\_32
- Track 16 : Mozy\_32
- Track 17 : Chevrolet\_31
- Track 18 : Mozy\_92
- Track 19 : Omega\_51
- Track 20 : 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 15, it was called in 21 of the 45 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:

- Attis\_64, Blubba\_240, Cane17\_242, Chevrolet\_31, Colt\_243, GMA4\_67, Galactic\_32, Girr\_32, Hamulus\_31, Hlubikazi\_31, Keitabear\_36, Kingsley\_29, Mandlovu\_31, MinionDave\_33, MisterCuddles\_32, Mozy\_32, Mozy\_92, Omega\_51, Ovechkin\_31, Ramsey\_33, Ruby\_32, SoilAssassin\_64, Soul22\_35, StAnnes\_29, Strokeseat\_31,

### Summary by start number:

Start 2:

- Found in 12 of 56 ( 21.4% ) of genes in pham
- Manual Annotations of this start: 5 of 45
- Called 41.7% of time when present
- Phage (with cluster) where this start called: Chevrolet\_31 (F1), Galactic\_32 (F1), MinionDave\_33 (F1), Ovechkin\_31 (F1), Ramsey\_33 (F1),

Start 3:

- Found in 1 of 56 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Omega\_51 (J),

Start 5:

- Found in 8 of 56 ( 14.3% ) of genes in pham
- Manual Annotations of this start: 7 of 45
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Hamulus\_31 (F1), Hlubikazi\_31 (F1), Kingsley\_29 (F1), Mandlovu\_31 (F1), Soul22\_35 (F2), StAnnes\_29 (F1), Strokeseat\_31 (F1),

Start 6:

- Found in 1 of 56 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mozy\_92 (F1),

Start 8:

- Found in 3 of 56 ( 5.4% ) of genes in pham
- Manual Annotations of this start: 3 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Girr\_32 (F1), MisterCuddles\_32 (F1), Ruby\_32 (F1),

Start 9:

- Found in 1 of 56 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Keitabear\_36 (DE1),

Start 10:

- Found in 1 of 56 ( 1.8% ) 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 14:

- Found in 3 of 56 ( 5.4% ) of genes in pham
- Manual Annotations of this start: 3 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Blubba\_240 (C1), Cane17\_242 (C1), Colt\_243 (C1),

Start 15:

- Found in 31 of 56 ( 55.4% ) of genes in pham
- Manual Annotations of this start: 21 of 45
- 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 22:

- Found in 2 of 56 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 1 of 45
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Mozy\_32 (F1),

Start 23:

- Found in 2 of 56 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 2 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Attis\_64 (CZ2), SoilAssassin\_64 (CZ2),

**Summary by clusters:**

There are 8 clusters represented in this pham: F1, F2, CZ2, DE1, J, singleton, A1, C1,

Info for manual annotations of cluster A1:

- Start number 15 was manually annotated 21 times for cluster A1.

Info for manual annotations of cluster C1:

- Start number 14 was manually annotated 3 times for cluster C1.

Info for manual annotations of cluster CZ2:

- Start number 23 was manually annotated 2 times for cluster CZ2.

Info for manual annotations of cluster DE1:

- Start number 9 was manually annotated 1 time for cluster DE1.

Info for manual annotations of cluster F1:

- Start number 2 was manually annotated 5 times for cluster F1.
- Start number 5 was manually annotated 6 times for cluster F1.
- Start number 6 was manually annotated 1 time for cluster F1.
- Start number 8 was manually annotated 3 times for cluster F1.
- Start number 22 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 5 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster J:

- Start number 3 was manually annotated 1 time for cluster J.

### ***Gene Information:***

Gene: Aldrich\_9 Start: 4591, Stop: 5169, Start Num: 15

Candidate Starts for Aldrich\_9:

(Start: 15 @4591 has 21 MA's), (32, 4717), (64, 5050),

Gene: Attis\_64 Start: 43105, Stop: 43650, Start Num: 23

Candidate Starts for Attis\_64:

(Start: 23 @43105 has 2 MA's), (26, 43147), (29, 43168), (34, 43192), (44, 43231), (46, 43243), (50, 43273), (54, 43378), (65, 43516),

Gene: BillKnuckles\_9 Start: 4709, Stop: 5290, Start Num: 15

Candidate Starts for BillKnuckles\_9:

(Start: 15 @4709 has 21 MA's), (27, 4811), (31, 4832), (44, 4880), (64, 5159),

Gene: Blesser\_7 Start: 4048, Stop: 4662, Start Num: 15

Candidate Starts for Blesser\_7:

(Start: 15 @4048 has 21 MA's), (Start: 22 @4117 has 1 MA's), (62, 4522),

Gene: Blubba\_240 Start: 148292, Stop: 148846, Start Num: 14

Candidate Starts for Blubba\_240:

(12, 148286), (Start: 14 @148292 has 3 MA's), (20, 148340), (25, 148403), (49, 148559), (51, 148631), (53, 148643), (58, 148721),

Gene: Buttons\_9 Start: 4220, Stop: 4798, Start Num: 15

Candidate Starts for Buttons\_9:

(Start: 15 @4220 has 21 MA's), (32, 4346), (64, 4679),

Gene: Cane17\_242 Start: 148701, Stop: 149255, Start Num: 14

Candidate Starts for Cane17\_242:

(12, 148695), (Start: 14 @148701 has 3 MA's), (20, 148749), (25, 148812), (49, 148968), (51, 149040), (53, 149052), (58, 149130),

Gene: CartmannCramer\_8 Start: 4548, Stop: 5126, Start Num: 15

Candidate Starts for CartmannCramer\_8:

(Start: 15 @4548 has 21 MA's), (32, 4674), (64, 5007),

Gene: CatBus\_9 Start: 4783, Stop: 5361, Start Num: 15

Candidate Starts for CatBus\_9:

(Start: 15 @4783 has 21 MA's), (32, 4909), (64, 5242),

Gene: Chevrolet\_31 Start: 27455, Stop: 28054, Start Num: 2

Candidate Starts for Chevrolet\_31:

(Start: 2 @27455 has 5 MA's), (13, 27557), (42, 27779), (47, 27815), (57, 27980), (61, 28025),

Gene: Colt\_243 Start: 147893, Stop: 148447, Start Num: 14

Candidate Starts for Colt\_243:

(12, 147887), (Start: 14 @147893 has 3 MA's), (20, 147941), (25, 148004), (49, 148160), (51, 148232), (53, 148244), (58, 148322),

Gene: DD5\_9 Start: 4751, Stop: 5332, Start Num: 15

Candidate Starts for DD5\_9:

(Start: 15 @4751 has 21 MA's), (27, 4853), (31, 4874), (44, 4922), (64, 5201),

Gene: DirtDevil\_9 Start: 4591, Stop: 5169, Start Num: 15

Candidate Starts for DirtDevil\_9:

(Start: 15 @4591 has 21 MA's), (32, 4717), (64, 5050),

Gene: Edtherson\_9 Start: 4530, Stop: 5108, Start Num: 15

Candidate Starts for Edtherson\_9:

(Start: 15 @4530 has 21 MA's), (32, 4656), (64, 4989),

Gene: GMA4\_67 Start: 43840, Stop: 44490, Start Num: 10

Candidate Starts for GMA4\_67:

(10, 43840), (16, 43870), (35, 44059), (37, 44065), (47, 44122), (59, 44284),

Gene: Galactic\_32 Start: 27751, Stop: 28350, Start Num: 2

Candidate Starts for Galactic\_32:

(Start: 2 @27751 has 5 MA's), (13, 27853), (42, 28075), (47, 28111), (57, 28276), (61, 28321),

Gene: Girr\_32 Start: 27712, Stop: 28464, Start Num: 8

Candidate Starts for Girr\_32:

(Start: 8 @27712 has 3 MA's), (13, 27775), (18, 27823), (24, 27871), (37, 27982), (39, 27991), (51, 28117), (66, 28384),

Gene: Graduation\_10 Start: 4816, Stop: 5397, Start Num: 15

Candidate Starts for Graduation\_10:

(Start: 15 @4816 has 21 MA's), (27, 4918), (31, 4939), (44, 4987), (64, 5266),

Gene: GroundGoblin\_9 Start: 4591, Stop: 5169, Start Num: 15

Candidate Starts for GroundGoblin\_9:

(Start: 15 @4591 has 21 MA's), (32, 4717), (64, 5050),

Gene: Gwendoluna\_9 Start: 4700, Stop: 5281, Start Num: 15

Candidate Starts for Gwendoluna\_9:

(Start: 15 @4700 has 21 MA's), (27, 4802), (31, 4823), (44, 4871), (64, 5150),

Gene: Hamulus\_31 Start: 27654, Stop: 28418, Start Num: 5

Candidate Starts for Hamulus\_31:

(Start: 2 @27627 has 5 MA's), (Start: 5 @27654 has 7 MA's), (13, 27729), (18, 27777), (24, 27825), (37, 27936), (39, 27945), (51, 28071), (66, 28338),

Gene: Hermia\_10 Start: 4783, Stop: 5361, Start Num: 15

Candidate Starts for Hermia\_10:

(Start: 15 @4783 has 21 MA's), (32, 4909), (64, 5242),

Gene: Hlubikazi\_31 Start: 27761, Stop: 28381, Start Num: 5

Candidate Starts for Hlubikazi\_31:

(1, 27677), (Start: 2 @27734 has 5 MA's), (Start: 5 @27761 has 7 MA's), (13, 27836), (42, 28058), (47, 28094), (57, 28259), (61, 28304),

Gene: KBG\_9 Start: 4959, Stop: 5540, Start Num: 15

Candidate Starts for KBG\_9:

(Start: 15 @4959 has 21 MA's), (27, 5061), (31, 5082), (44, 5130), (64, 5409),

Gene: Keitabear\_36 Start: 34510, Stop: 33947, Start Num: 9

Candidate Starts for Keitabear\_36:

(7, 34564), (Start: 9 @34510 has 1 MA's), (11, 34501), (17, 34453), (19, 34426), (28, 34306), (39, 34243), (42, 34231), (56, 34024),

Gene: Kenmech\_10 Start: 4617, Stop: 5195, Start Num: 15

Candidate Starts for Kenmech\_10:

(Start: 15 @4617 has 21 MA's), (32, 4743), (64, 5076),

Gene: KikiBouba\_9 Start: 4592, Stop: 5170, Start Num: 15

Candidate Starts for KikiBouba\_9:

(Start: 15 @4592 has 21 MA's), (32, 4718), (64, 5051),

Gene: Kingsley\_29 Start: 26483, Stop: 27247, Start Num: 5

Candidate Starts for Kingsley\_29:

(Start: 2 @26456 has 5 MA's), (Start: 5 @26483 has 7 MA's), (13, 26558), (18, 26606), (24, 26654), (37, 26765), (39, 26774), (51, 26900), (66, 27167),

Gene: LilBib\_8 Start: 4381, Stop: 4959, Start Num: 15

Candidate Starts for LilBib\_8:

(Start: 15 @4381 has 21 MA's), (32, 4507), (64, 4840),

Gene: Mandlovu\_31 Start: 27703, Stop: 28323, Start Num: 5

Candidate Starts for Mandlovu\_31:

(1, 27619), (Start: 2 @27676 has 5 MA's), (Start: 5 @27703 has 7 MA's), (13, 27778), (42, 28000), (47, 28036), (57, 28201), (61, 28246),

Gene: MinionDave\_33 Start: 28083, Stop: 28682, Start Num: 2

Candidate Starts for MinionDave\_33:

(Start: 2 @28083 has 5 MA's), (13, 28185), (42, 28407), (47, 28443), (57, 28608), (61, 28653),

Gene: MisterCuddles\_32 Start: 27712, Stop: 28464, Start Num: 8

Candidate Starts for MisterCuddles\_32:

(Start: 8 @27712 has 3 MA's), (13, 27775), (18, 27823), (24, 27871), (37, 27982), (39, 27991), (51, 28117), (66, 28384),

Gene: Monet\_9 Start: 4498, Stop: 5076, Start Num: 15

Candidate Starts for Monet\_9:  
(Start: 15 @4498 has 21 MA's), (32, 4624), (64, 4957),

Gene: Mozy\_32 Start: 27800, Stop: 28405, Start Num: 22  
Candidate Starts for Mozy\_32:  
(13, 27716), (Start: 22 @27800 has 1 MA's), (30, 27872), (33, 27896), (34, 27902), (40, 27932), (45, 27953), (47, 27974), (52, 28061),

Gene: Mozy\_92 Start: 49652, Stop: 50401, Start Num: 6  
Candidate Starts for Mozy\_92:  
(4, 49640), (Start: 6 @49652 has 1 MA's), (21, 49799), (38, 49931), (41, 49946), (48, 49991), (55, 50144),

Gene: Nerujay\_9 Start: 4453, Stop: 5034, Start Num: 15  
Candidate Starts for Nerujay\_9:  
(Start: 15 @4453 has 21 MA's), (27, 4555), (31, 4576), (44, 4624), (64, 4903),

Gene: Norz\_9 Start: 4534, Stop: 5112, Start Num: 15  
Candidate Starts for Norz\_9:  
(Start: 15 @4534 has 21 MA's), (32, 4660), (64, 4993),

Gene: Noxious\_9 Start: 4783, Stop: 5361, Start Num: 15  
Candidate Starts for Noxious\_9:  
(Start: 15 @4783 has 21 MA's), (32, 4909), (64, 5242),

Gene: Omega\_51 Start: 42659, Stop: 43288, Start Num: 3  
Candidate Starts for Omega\_51:  
(Start: 3 @42659 has 1 MA's), (13, 42746), (20, 42809), (25, 42875), (26, 42899), (32, 42932), (36, 42965), (42, 42986), (43, 42989), (47, 43022), (51, 43100), (60, 43211), (63, 43259),

Gene: Ovechkin\_31 Start: 27645, Stop: 28436, Start Num: 2  
Candidate Starts for Ovechkin\_31:  
(Start: 2 @27645 has 5 MA's), (Start: 5 @27672 has 7 MA's), (13, 27747), (18, 27795), (24, 27843), (37, 27954), (39, 27963), (51, 28089), (66, 28356),

Gene: Papez\_9 Start: 5271, Stop: 5849, Start Num: 15  
Candidate Starts for Papez\_9:  
(Start: 15 @5271 has 21 MA's), (32, 5397), (64, 5730),

Gene: PowerRanger\_8 Start: 4332, Stop: 4910, Start Num: 15  
Candidate Starts for PowerRanger\_8:  
(Start: 15 @4332 has 21 MA's), (32, 4458), (64, 4791),

Gene: QTRlifeCrisis\_8 Start: 4494, Stop: 5075, Start Num: 15  
Candidate Starts for QTRlifeCrisis\_8:  
(Start: 15 @4494 has 21 MA's), (27, 4596), (31, 4617), (44, 4665), (64, 4944),

Gene: Ramsey\_33 Start: 27746, Stop: 28345, Start Num: 2  
Candidate Starts for Ramsey\_33:  
(Start: 2 @27746 has 5 MA's), (13, 27848), (42, 28070), (47, 28106), (57, 28271), (61, 28316),

Gene: Ruby\_32 Start: 27712, Stop: 28464, Start Num: 8  
Candidate Starts for Ruby\_32:

(Start: 8 @27712 has 3 MA's), (13, 27775), (18, 27823), (24, 27871), (37, 27982), (39, 27991), (51, 28117), (66, 28384),

Gene: SoilAssassin\_64 Start: 43104, Stop: 43649, Start Num: 23

Candidate Starts for SoilAssassin\_64:

(Start: 23 @43104 has 2 MA's), (26, 43146), (29, 43167), (34, 43191), (44, 43230), (46, 43242), (50, 43272), (54, 43377), (65, 43515),

Gene: Solon\_8 Start: 4653, Stop: 5234, Start Num: 15

Candidate Starts for Solon\_8:

(Start: 15 @4653 has 21 MA's), (27, 4755), (31, 4776), (44, 4824), (64, 5103),

Gene: Soul22\_35 Start: 27040, Stop: 27804, Start Num: 5

Candidate Starts for Soul22\_35:

(Start: 2 @27013 has 5 MA's), (Start: 5 @27040 has 7 MA's), (13, 27115), (18, 27163), (24, 27211), (37, 27322), (39, 27331), (51, 27457), (66, 27724),

Gene: SpikeBT\_9 Start: 4433, Stop: 5011, Start Num: 15

Candidate Starts for SpikeBT\_9:

(Start: 15 @4433 has 21 MA's), (32, 4559), (64, 4892),

Gene: Squee\_8 Start: 4160, Stop: 4741, Start Num: 15

Candidate Starts for Squee\_8:

(Start: 15 @4160 has 21 MA's), (27, 4262), (31, 4283), (44, 4331), (64, 4610),

Gene: StAnnes\_29 Start: 27239, Stop: 28003, Start Num: 5

Candidate Starts for StAnnes\_29:

(Start: 2 @27212 has 5 MA's), (Start: 5 @27239 has 7 MA's), (13, 27314), (18, 27362), (24, 27410), (37, 27521), (39, 27530), (51, 27656), (66, 27923),

Gene: Strokeseat\_31 Start: 27760, Stop: 28380, Start Num: 5

Candidate Starts for Strokeseat\_31:

(1, 27676), (Start: 2 @27733 has 5 MA's), (Start: 5 @27760 has 7 MA's), (13, 27835), (42, 28057), (47, 28093), (57, 28258), (61, 28303),

Gene: TheloniousMonk\_9 Start: 4484, Stop: 5062, Start Num: 15

Candidate Starts for TheloniousMonk\_9:

(Start: 15 @4484 has 21 MA's), (32, 4610), (64, 4943),

Gene: Treddle\_9 Start: 4499, Stop: 5077, Start Num: 15

Candidate Starts for Treddle\_9:

(Start: 15 @4499 has 21 MA's), (32, 4625), (64, 4958),

Gene: Whitspit\_9 Start: 4658, Stop: 5239, Start Num: 15

Candidate Starts for Whitspit\_9:

(Start: 15 @4658 has 21 MA's), (27, 4760), (31, 4781), (44, 4829), (64, 5108),

Gene: Zeuska\_8 Start: 4378, Stop: 4959, Start Num: 15

Candidate Starts for Zeuska\_8:

(Start: 15 @4378 has 21 MA's), (27, 4480), (31, 4501), (44, 4549), (64, 4828),