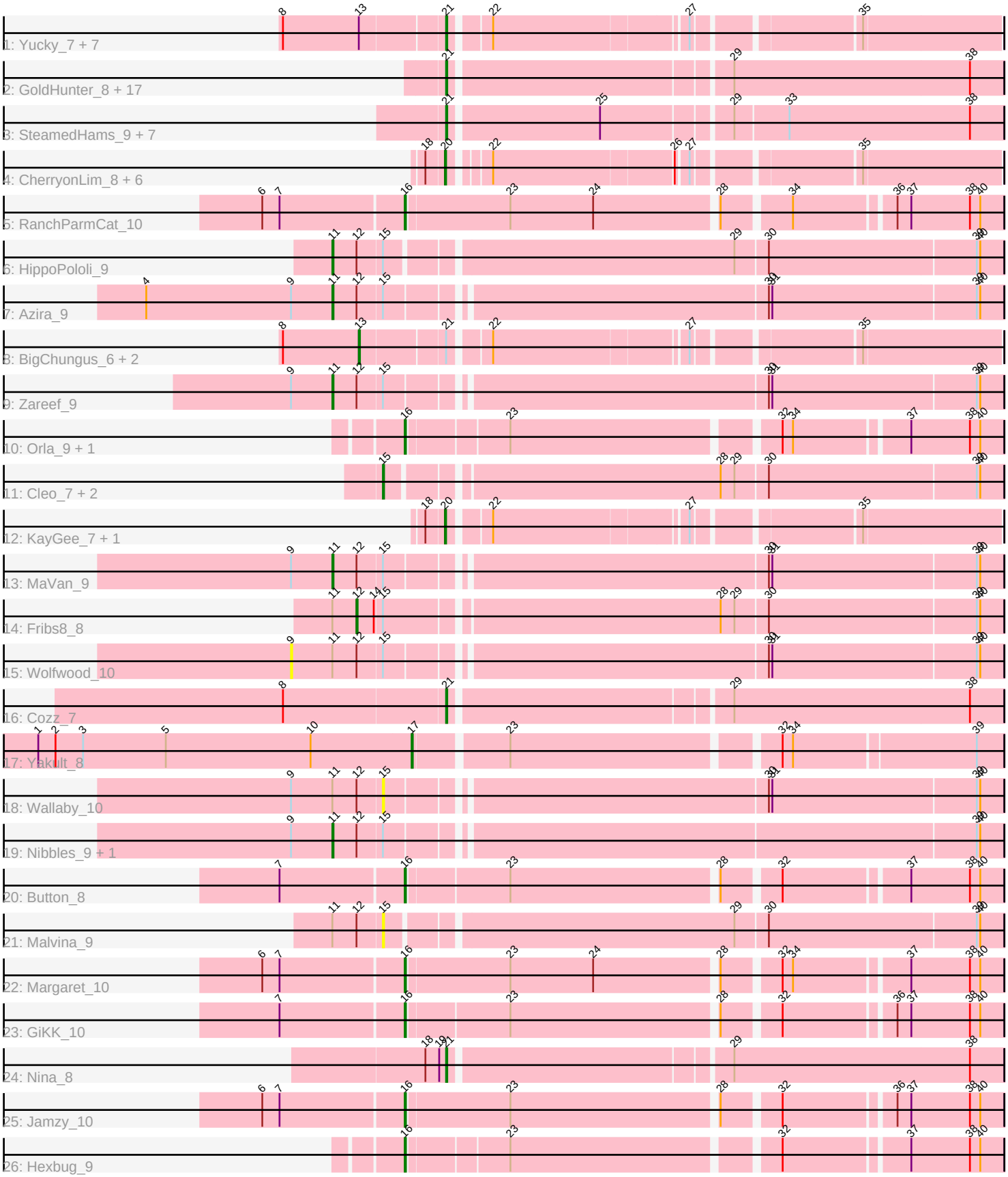
Pham 296538


1: Yucky_7 + 7
2: GoldHunter_8 + 17
3: SteamedHams_9 + 7
4: CherryonLim_8 + 6
5: RanchParmCat_10
6: HippoPololi_9
7: Azira_9
8: BigChungus_6 + 2
9: Zareef_9
10: Orla_9 + 1
11: Cleo_7 + 2
12: KayGee_7 + 1
13: MaVan_9
14: Fribs8_8
15: Wolfwood_10
16: Cozz_7
17: Yakult_8
18: Wallaby_10
19: Nibbles_9 + 1
20: Button_8
21: Malvina_9
22: Margaret_10
23: GiKK_10
24: Nina_8
25: Jamzy_10
26: Hexbug_9

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 296538 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296538 has 70 members, 22 are drafts.

Phages represented in each track:
• Track 1 : Yucky_7, CocoaPuff_6, SummitAcademy_6, Balloona_6, PotPie_7, Vine_8, Tarnish_7, Bavilard_7
• Track 2 : GoldHunter_8, Bubble_7, RedBaron_8, Quasar_7, Sopespian_7, RSchmailzl_8, Socotra_8, RADical_8, Axym_7, ChickenTender_9, Agatha_7, Eliott_7, Typhonomachy_7, PsychoKiller_7, Starburst_8, Burnsey_7, MunkgeeRoachy_7, Carsonalex_8
• Track 3 : SteamedHams_9, CanesSauce_7, Tolls_9, CaramelLatte_7, AndPeggy_6, BillDoor_9, Yarn_6, ChocoMunchkin_7
• Track 4 : CherryonLim_8, SheckWes_6, Mayweather_8, MAnor_7, ElJefes_6, Pons_7, McDazzle_6
• Track 5 : RanchParmCat_10
• Track 6 : HippoPololi_9
• Track 7 : Azira_9
• Track 8 : BigChungus_6, Feastonyeet_6, Lauer_6
• Track 9 : Zareef_9
• Track 10 : Orla_9, Nodigi_9
• Track 11 : Cleo_7, Gibbous_7, Dre3_7
• Track 12 : KayGee_7, Elinal_8
• Track 13 : MaVan_9
• Track 14 : Fribs8_8
• Track 15 : Wolfwood_10
• Track 16 : Cozz_7
• Track 17 : Yakult_8
• Track 18 : Wallaby_10
• Track 19 : Nibbles_9, Survivors_9
• Track 20 : Button_8
• Track 21 : Malvina_9
• Track 22 : Margaret_10
• Track 23 : GiKK_10
• Track 24 : Nina_8
• Track 25 : Jamzy_10
• Track 26 : Hexbug_9

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

The start number called the most often in the published annotations is 21, it was called in 19 of the 48 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Agatha_7, AndPeggy_6, Axym_7, Balloona_6, Bavilard_7, BillDoor_9, Bubble_7, Burnsey_7, CanesSauce_7, CaramelLatte_7, Carsonalex_8, ChickenTender_9, ChocoMunchkin_7, CocoaPuff_6, Cozz_7, Eliott_7, GoldHunter_8, MunkgeeRoachy_7, Nina_8, PotPie_7, PsychoKiller_7, Quasar_7, RADical_8, RSchmailzl_8, RedBaron_8, Socotra_8, Sopespian_7, Starburst_8, SteamedHams_9, SummitAcademy_6, Tarnish_7, Tolls_9, Typhonomachy_7, Vine_8, Yarn_6, Yucky_7,

Genes that have the "Most Annotated" start but do not call it:
• BigChungus_6, Feastonyeet_6, Lauer_6,

Genes that do not have the "Most Annotated" start:
• Azira_9, Button_8, CherryonLim_8, Cleo_7, Dre3_7, ElJefes_6, Elinal_8, Fribs8_8, GiKK_10, Gibbous_7, Hexbug_9, HippoPololi_9, Jamzy_10, KayGee_7, MAnor_7, MaVan_9, Malvina_9, Margaret_10, Mayweather_8, McDazzle_6, Nibbles_9, Nodigi_9, Orla_9, Pons_7, RanchParmCat_10, SheckWes_6, Survivors_9, Wallaby_10, Wolfwood_10, Yakult_8, Zareef_9,

Summary by start number:

Start 9:
• Found in 7 of 70 (10.0%) of genes in pham
• No Manual Annotations of this start.
• Called 14.3% of time when present
• Phage (with cluster) where this start called: Wolfwood_10 (CT),

Start 11:
• Found in 10 of 70 (14.3%) of genes in pham
• Manual Annotations of this start: 6 of 48
• Called 60.0% of time when present
• Phage (with cluster) where this start called: Azira_9 (CT), HippoPololi_9 (CT), MaVan_9 (CT), Nibbles_9 (CT), Survivors_9 (CT), Zareef_9 (CT),

Start 12:
• Found in 10 of 70 (14.3%) of genes in pham
• Manual Annotations of this start: 1 of 48
• Called 10.0% of time when present
• Phage (with cluster) where this start called: Fribs8_8 (CT),

Start 13:
• Found in 11 of 70 (15.7%) of genes in pham
• Manual Annotations of this start: 3 of 48
• Called 27.3% of time when present
• Phage (with cluster) where this start called: BigChungus_6 (CT), Feastonyeet_6 (CT), Lauer_6 (CT),

Start 15:
• Found in 13 of 70 (18.6%) of genes in pham

• Manual Annotations of this start: 3 of 48
• Called 38.5% of time when present
• Phage (with cluster) where this start called: Cleo_7 (CT), Dre3_7 (CT), Gibbous_7 (CT), Malvina_9 (CT), Wallaby_10 (CT),

Start 16:
• Found in 8 of 70 (11.4%) of genes in pham
• Manual Annotations of this start: 8 of 48
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Button_8 (CT), GiKK_10 (CT), Hexbug_9 (CT), Jamzy_10 (CT), Margaret_10 (CT), Nodigi_9 (CT), Orla_9 (CT), RanchParmCat_10 (CT),

Start 17:
• Found in 1 of 70 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 48
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Yakult_8 (CT),

Start 20:
• Found in 9 of 70 (12.9%) of genes in pham
• Manual Annotations of this start: 7 of 48
• Called 100.0% of time when present
• Phage (with cluster) where this start called: CherryonLim_8 (CT), ElJefes_6 (CT), Elinal_8 (CT), KayGee_7 (CT), MAnor_7 (CT), Mayweather_8 (CT), McDazzle_6 (CT), Pons_7 (CT), SheckWes_6 (CT),

Start 21:
• Found in 39 of 70 (55.7%) of genes in pham
• Manual Annotations of this start: 19 of 48
• Called 92.3% of time when present
• Phage (with cluster) where this start called: Agatha_7 (CT), AndPeggy_6 (CT), Axym_7 (CT), Balloona_6 (CT), Bavilard_7 (CT), BillDoor_9 (CT), Bubble_7 (CT), Burnsey_7 (CT), CanesSauce_7 (CT), CaramelLatte_7 (CT), Carsonalex_8 (CT), ChickenTender_9 (CT), ChocoMunchkin_7 (CT), CocoaPuff_6 (CT), Cozz_7 (CT), Eliott_7 (CT), GoldHunter_8 (CT), MunkgeeRoachy_7 (CT), Nina_8 (CT), PotPie_7 (CT), PsychoKiller_7 (CT), Quasar_7 (CT), RADical_8 (CT), RSchmailzl_8 (CT), RedBaron_8 (CT), Socotra_8 (CT), Sopespian_7 (CT), Starburst_8 (CT), SteamedHams_9 (CT), SummitAcademy_6 (CT), Tarnish_7 (CT), Tolls_9 (CT), Typhonomachy_7 (CT), Vine_8 (CT), Yarn_6 (CT), Yucky_7 (CT),

Summary by clusters:

There is one cluster represented in this pham: CT

Info for manual annotations of cluster CT:
•Start number 11 was manually annotated 6 times for cluster CT.
•Start number 12 was manually annotated 1 time for cluster CT.
•Start number 13 was manually annotated 3 times for cluster CT.
•Start number 15 was manually annotated 3 times for cluster CT.
•Start number 16 was manually annotated 8 times for cluster CT.
•Start number 17 was manually annotated 1 time for cluster CT.
•Start number 20 was manually annotated 7 times for cluster CT.

•Start number 21 was manually annotated 19 times for cluster CT.

Gene Information:

Gene: Agatha_7 Start: 4894, Stop: 5358, Start Num: 21
Candidate Starts for Agatha_7:
(Start: 21 @4894 has 19 MA's), (29, 5125), (38, 5329),

Gene: AndPeggy_6 Start: 4931, Stop: 5392, Start Num: 21
Candidate Starts for AndPeggy_6:
(Start: 21 @4931 has 19 MA's), (25, 5057), (29, 5162), (33, 5207), (38, 5363),

Gene: Axym_7 Start: 4894, Stop: 5358, Start Num: 21
Candidate Starts for Axym_7:
(Start: 21 @4894 has 19 MA's), (29, 5125), (38, 5329),

Gene: Azira_9 Start: 5719, Stop: 6273, Start Num: 11
Candidate Starts for Azira_9:
(4, 5557), (9, 5683), (Start: 11 @5719 has 6 MA's), (Start: 12 @5740 has 1 MA's), (Start: 15 @5761 has 3 MA's), (30, 6073), (31, 6076), (39, 6250), (40, 6253),

Gene: Balloona_6 Start: 4637, Stop: 5071, Start Num: 21
Candidate Starts for Balloona_6:
(8, 4502), (Start: 13 @4568 has 3 MA's), (Start: 21 @4637 has 19 MA's), (22, 4667), (27, 4826), (35, 4955),

Gene: Bavilard_7 Start: 5413, Stop: 5847, Start Num: 21
Candidate Starts for Bavilard_7:
(8, 5278), (Start: 13 @5344 has 3 MA's), (Start: 21 @5413 has 19 MA's), (22, 5443), (27, 5602), (35, 5731),

Gene: BigChungus_6 Start: 4593, Stop: 5096, Start Num: 13
Candidate Starts for BigChungus_6:
(8, 4527), (Start: 13 @4593 has 3 MA's), (Start: 21 @4662 has 19 MA's), (22, 4692), (27, 4851), (35, 4980),

Gene: BillDoor_9 Start: 4896, Stop: 5357, Start Num: 21
Candidate Starts for BillDoor_9:
(Start: 21 @4896 has 19 MA's), (25, 5022), (29, 5127), (33, 5172), (38, 5328),

Gene: Bubble_7 Start: 4894, Stop: 5358, Start Num: 21
Candidate Starts for Bubble_7:
(Start: 21 @4894 has 19 MA's), (29, 5125), (38, 5329),

Gene: Burnsey_7 Start: 4894, Stop: 5358, Start Num: 21
Candidate Starts for Burnsey_7:
(Start: 21 @4894 has 19 MA's), (29, 5125), (38, 5329),

Gene: Button_8 Start: 4950, Stop: 5435, Start Num: 16
Candidate Starts for Button_8:

(7, 4845), (Start: 16 @4950 has 8 MA's), (23, 5034), (28, 5208), (32, 5253), (37, 5355), (38, 5406), (40, 5415),

Gene: CanesSauce_7 Start: 4931, Stop: 5392, Start Num: 21
Candidate Starts for CanesSauce_7:
(Start: 21 @4931 has 19 MA's), (25, 5057), (29, 5162), (33, 5207), (38, 5363),

Gene: CaramelLatte_7 Start: 4931, Stop: 5392, Start Num: 21
Candidate Starts for CaramelLatte_7:
(Start: 21 @4931 has 19 MA's), (25, 5057), (29, 5162), (33, 5207), (38, 5363),

Gene: Carsonalex_8 Start: 4951, Stop: 5415, Start Num: 21
Candidate Starts for Carsonalex_8:
(Start: 21 @4951 has 19 MA's), (29, 5182), (38, 5386),

Gene: CherryonLim_8 Start: 5387, Stop: 5818, Start Num: 20
Candidate Starts for CherryonLim_8:
(18, 5372), (Start: 20 @5387 has 7 MA's), (22, 5414), (26, 5564), (27, 5573), (35, 5702),

Gene: ChickenTender_9 Start: 4942, Stop: 5406, Start Num: 21
Candidate Starts for ChickenTender_9:
(Start: 21 @4942 has 19 MA's), (29, 5173), (38, 5377),

Gene: ChocoMunchkin_7 Start: 4931, Stop: 5392, Start Num: 21
Candidate Starts for ChocoMunchkin_7:
(Start: 21 @4931 has 19 MA's), (25, 5057), (29, 5162), (33, 5207), (38, 5363),

Gene: Cleo_7 Start: 5059, Stop: 5571, Start Num: 15
Candidate Starts for Cleo_7:
(Start: 15 @5059 has 3 MA's), (28, 5332), (29, 5344), (30, 5371), (39, 5548), (40, 5551),

Gene: CocoaPuff_6 Start: 4637, Stop: 5071, Start Num: 21
Candidate Starts for CocoaPuff_6:
(8, 4502), (Start: 13 @4568 has 3 MA's), (Start: 21 @4637 has 19 MA's), (22, 4667), (27, 4826), (35, 4955),

Gene: Cozz_7 Start: 4895, Stop: 5359, Start Num: 21
Candidate Starts for Cozz_7:
(8, 4757), (Start: 21 @4895 has 19 MA's), (29, 5126), (38, 5330),

Gene: Dre3_7 Start: 5006, Stop: 5518, Start Num: 15
Candidate Starts for Dre3_7:
(Start: 15 @5006 has 3 MA's), (28, 5279), (29, 5291), (30, 5318), (39, 5495), (40, 5498),

Gene: ElJefes_6 Start: 5107, Stop: 5541, Start Num: 20
Candidate Starts for ElJefes_6:
(18, 5092), (Start: 20 @5107 has 7 MA's), (22, 5137), (26, 5287), (27, 5296), (35, 5425),

Gene: Elinal_8 Start: 4639, Stop: 5073, Start Num: 20
Candidate Starts for Elinal_8:
(18, 4624), (Start: 20 @4639 has 7 MA's), (22, 4669), (27, 4828), (35, 4957),

Gene: Eliott_7 Start: 4894, Stop: 5358, Start Num: 21

Candidate Starts for Eliott_7:
(Start: 21 @4894 has 19 MA's), (29, 5125), (38, 5329),

Gene: Feastonyeet_6 Start: 4593, Stop: 5096, Start Num: 13
Candidate Starts for Feastonyeet_6:
(8, 4527), (Start: 13 @4593 has 3 MA's), (Start: 21 @4662 has 19 MA's), (22, 4692), (27, 4851), (35, 4980),

Gene: Fribs8_8 Start: 5534, Stop: 6073, Start Num: 12
Candidate Starts for Fribs8_8:
(Start: 11 @5513 has 6 MA's), (Start: 12 @5534 has 1 MA's), (14, 5549), (Start: 15 @5555 has 3 MA's), (28, 5834), (29, 5846), (30, 5873), (39, 6050), (40, 6053),

Gene: GiKK_10 Start: 5253, Stop: 5738, Start Num: 16
Candidate Starts for GiKK_10:
(7, 5148), (Start: 16 @5253 has 8 MA's), (23, 5337), (28, 5511), (32, 5556), (36, 5646), (37, 5658), (38, 5709), (40, 5718),

Gene: Gibbous_7 Start: 5006, Stop: 5518, Start Num: 15
Candidate Starts for Gibbous_7:
(Start: 15 @5006 has 3 MA's), (28, 5279), (29, 5291), (30, 5318), (39, 5495), (40, 5498),

Gene: GoldHunter_8 Start: 4894, Stop: 5358, Start Num: 21
Candidate Starts for GoldHunter_8:
(Start: 21 @4894 has 19 MA's), (29, 5125), (38, 5329),

Gene: Hexbug_9 Start: 5939, Stop: 6421, Start Num: 16
Candidate Starts for Hexbug_9:
(Start: 16 @5939 has 8 MA's), (23, 6020), (32, 6239), (37, 6341), (38, 6392), (40, 6401),

Gene: HippoPololi_9 Start: 5605, Stop: 6162, Start Num: 11
Candidate Starts for HippoPololi_9:
(Start: 11 @5605 has 6 MA's), (Start: 12 @5626 has 1 MA's), (Start: 15 @5647 has 3 MA's), (29, 5935), (30, 5962), (39, 6139), (40, 6142),

Gene: Jamzy_10 Start: 5261, Stop: 5749, Start Num: 16
Candidate Starts for Jamzy_10:
(6, 5141), (7, 5156), (Start: 16 @5261 has 8 MA's), (23, 5348), (28, 5522), (32, 5567), (36, 5657), (37, 5669), (38, 5720), (40, 5729),

Gene: KayGee_7 Start: 4639, Stop: 5073, Start Num: 20
Candidate Starts for KayGee_7:
(18, 4624), (Start: 20 @4639 has 7 MA's), (22, 4669), (27, 4828), (35, 4957),

Gene: Lauer_6 Start: 4623, Stop: 5126, Start Num: 13
Candidate Starts for Lauer_6:
(8, 4557), (Start: 13 @4623 has 3 MA's), (Start: 21 @4692 has 19 MA's), (22, 4722), (27, 4881), (35, 5010),

Gene: MAnor_7 Start: 4636, Stop: 5067, Start Num: 20
Candidate Starts for MAnor_7:
(18, 4621), (Start: 20 @4636 has 7 MA's), (22, 4663), (26, 4813), (27, 4822), (35, 4951),

Gene: MaVan_9 Start: 5719, Stop: 6273, Start Num: 11
Candidate Starts for MaVan_9:
(9, 5683), (Start: 11 @5719 has 6 MA's), (Start: 12 @5740 has 1 MA's), (Start: 15 @5761 has 3 MA's), (30, 6073), (31, 6076), (39, 6250), (40, 6253),

Gene: Malvina_9 Start: 5650, Stop: 6165, Start Num: 15
Candidate Starts for Malvina_9:
(Start: 11 @5608 has 6 MA's), (Start: 12 @5629 has 1 MA's), (Start: 15 @5650 has 3 MA's), (29, 5938), (30, 5965), (39, 6142), (40, 6145),

Gene: Margaret_10 Start: 5637, Stop: 6125, Start Num: 16
Candidate Starts for Margaret_10:
(6, 5517), (7, 5532), (Start: 16 @5637 has 8 MA's), (23, 5724), (24, 5796), (28, 5898), (32, 5943), (34, 5952), (37, 6045), (38, 6096), (40, 6105),

Gene: Mayweather_8 Start: 5257, Stop: 5688, Start Num: 20
Candidate Starts for Mayweather_8:
(18, 5242), (Start: 20 @5257 has 7 MA's), (22, 5284), (26, 5434), (27, 5443), (35, 5572),

Gene: McDazzle_6 Start: 5101, Stop: 5535, Start Num: 20
Candidate Starts for McDazzle_6:
(18, 5086), (Start: 20 @5101 has 7 MA's), (22, 5131), (26, 5281), (27, 5290), (35, 5419),

Gene: MunkgeeRoachy_7 Start: 4942, Stop: 5406, Start Num: 21
Candidate Starts for MunkgeeRoachy_7:
(Start: 21 @4942 has 19 MA's), (29, 5173), (38, 5377),

Gene: Nibbles_9 Start: 5719, Stop: 6273, Start Num: 11
Candidate Starts for Nibbles_9:
(9, 5683), (Start: 11 @5719 has 6 MA's), (Start: 12 @5740 has 1 MA's), (Start: 15 @5761 has 3 MA's), (39, 6250), (40, 6253),

Gene: Nina_8 Start: 5928, Stop: 6392, Start Num: 21
Candidate Starts for Nina_8:
(18, 5910), (19, 5922), (Start: 21 @5928 has 19 MA's), (29, 6159), (38, 6363),

Gene: Nodigi_9 Start: 5940, Stop: 6416, Start Num: 16
Candidate Starts for Nodigi_9:
(Start: 16 @5940 has 8 MA's), (23, 6015), (32, 6234), (34, 6243), (37, 6336), (38, 6387), (40, 6396),

Gene: Orla_9 Start: 5939, Stop: 6421, Start Num: 16
Candidate Starts for Orla_9:
(Start: 16 @5939 has 8 MA's), (23, 6020), (32, 6239), (34, 6248), (37, 6341), (38, 6392), (40, 6401),

Gene: Pons_7 Start: 4636, Stop: 5067, Start Num: 20
Candidate Starts for Pons_7:
(18, 4621), (Start: 20 @4636 has 7 MA's), (22, 4663), (26, 4813), (27, 4822), (35, 4951),

Gene: PotPie_7 Start: 5496, Stop: 5930, Start Num: 21
Candidate Starts for PotPie_7:
(8, 5361), (Start: 13 @5427 has 3 MA's), (Start: 21 @5496 has 19 MA's), (22, 5526), (27, 5685), (35, 5814),

Gene: PsychoKiller_7 Start: 4894, Stop: 5358, Start Num: 21
Candidate Starts for PsychoKiller_7:
(Start: 21 @4894 has 19 MA's), (29, 5125), (38, 5329),

Gene: Quasar_7 Start: 5515, Stop: 5979, Start Num: 21
Candidate Starts for Quasar_7:
(Start: 21 @5515 has 19 MA's), (29, 5746), (38, 5950),

Gene: RADical_8 Start: 4895, Stop: 5359, Start Num: 21
Candidate Starts for RADical_8:
(Start: 21 @4895 has 19 MA's), (29, 5126), (38, 5330),

Gene: RSchmailzl_8 Start: 5035, Stop: 5499, Start Num: 21
Candidate Starts for RSchmailzl_8:
(Start: 21 @5035 has 19 MA's), (29, 5266), (38, 5470),

Gene: RanchParmCat_10 Start: 5637, Stop: 6125, Start Num: 16
Candidate Starts for RanchParmCat_10:
(6, 5517), (7, 5532), (Start: 16 @5637 has 8 MA's), (23, 5724), (24, 5796), (28, 5898), (34, 5952), (36, 6033), (37, 6045), (38, 6096), (40, 6105),

Gene: RedBaron_8 Start: 4939, Stop: 5403, Start Num: 21
Candidate Starts for RedBaron_8:
(Start: 21 @4939 has 19 MA's), (29, 5170), (38, 5374),

Gene: SheckWes_6 Start: 4636, Stop: 5067, Start Num: 20
Candidate Starts for SheckWes_6:
(18, 4621), (Start: 20 @4636 has 7 MA's), (22, 4663), (26, 4813), (27, 4822), (35, 4951),

Gene: Socotra_8 Start: 4894, Stop: 5358, Start Num: 21
Candidate Starts for Socotra_8:
(Start: 21 @4894 has 19 MA's), (29, 5125), (38, 5329),

Gene: Sopespian_7 Start: 4894, Stop: 5358, Start Num: 21
Candidate Starts for Sopespian_7:
(Start: 21 @4894 has 19 MA's), (29, 5125), (38, 5329),

Gene: Starburst_8 Start: 4894, Stop: 5358, Start Num: 21
Candidate Starts for Starburst_8:
(Start: 21 @4894 has 19 MA's), (29, 5125), (38, 5329),

Gene: SteamedHams_9 Start: 4931, Stop: 5392, Start Num: 21
Candidate Starts for SteamedHams_9:
(Start: 21 @4931 has 19 MA's), (25, 5057), (29, 5162), (33, 5207), (38, 5363),

Gene: SummitAcademy_6 Start: 4711, Stop: 5145, Start Num: 21
Candidate Starts for SummitAcademy_6:
(8, 4576), (Start: 13 @4642 has 3 MA's), (Start: 21 @4711 has 19 MA's), (22, 4741), (27, 4900), (35, 5029),

Gene: Survivors_9 Start: 5573, Stop: 6127, Start Num: 11
Candidate Starts for Survivors_9:

(9, 5537), (Start: 11 @5573 has 6 MA's), (Start: 12 @5594 has 1 MA's), (Start: 15 @5615 has 3 MA's), (39, 6104), (40, 6107),

Gene: Tarnish_7 Start: 5010, Stop: 5444, Start Num: 21
Candidate Starts for Tarnish_7:
(8, 4875), (Start: 13 @4941 has 3 MA's), (Start: 21 @5010 has 19 MA's), (22, 5040), (27, 5199), (35, 5328),

Gene: Tolls_9 Start: 4935, Stop: 5396, Start Num: 21
Candidate Starts for Tolls_9:
(Start: 21 @4935 has 19 MA's), (25, 5061), (29, 5166), (33, 5211), (38, 5367),

Gene: Typhonomachy_7 Start: 4894, Stop: 5358, Start Num: 21
Candidate Starts for Typhonomachy_7:
(Start: 21 @4894 has 19 MA's), (29, 5125), (38, 5329),

Gene: Vine_8 Start: 5635, Stop: 6069, Start Num: 21
Candidate Starts for Vine_8:
(8, 5500), (Start: 13 @5566 has 3 MA's), (Start: 21 @5635 has 19 MA's), (22, 5665), (27, 5824), (35, 5953),

Gene: Wallaby_10 Start: 5760, Stop: 6272, Start Num: 15
Candidate Starts for Wallaby_10:
(9, 5682), (Start: 11 @5718 has 6 MA's), (Start: 12 @5739 has 1 MA's), (Start: 15 @5760 has 3 MA's), (30, 6072), (31, 6075), (39, 6249), (40, 6252),

Gene: Wolfwood_10 Start: 5682, Stop: 6272, Start Num: 9
Candidate Starts for Wolfwood_10:
(9, 5682), (Start: 11 @5718 has 6 MA's), (Start: 12 @5739 has 1 MA's), (Start: 15 @5760 has 3 MA's), (30, 6072), (31, 6075), (39, 6249), (40, 6252),

Gene: Yakult_8 Start: 4830, Stop: 5309, Start Num: 17
Candidate Starts for Yakult_8:
(1, 4506), (2, 4521), (3, 4545), (5, 4617), (10, 4743), (Start: 17 @4830 has 1 MA's), (23, 4905), (32, 5124), (34, 5133), (39, 5286),

Gene: Yarn_6 Start: 4925, Stop: 5386, Start Num: 21
Candidate Starts for Yarn_6:
(Start: 21 @4925 has 19 MA's), (25, 5051), (29, 5156), (33, 5201), (38, 5357),

Gene: Yucky_7 Start: 5496, Stop: 5930, Start Num: 21
Candidate Starts for Yucky_7:
(8, 5361), (Start: 13 @5427 has 3 MA's), (Start: 21 @5496 has 19 MA's), (22, 5526), (27, 5685), (35, 5814),

Gene: Zareef_9 Start: 5720, Stop: 6274, Start Num: 11
Candidate Starts for Zareef_9:
(9, 5684), (Start: 11 @5720 has 6 MA's), (Start: 12 @5741 has 1 MA's), (Start: 15 @5762 has 3 MA's), (30, 6074), (31, 6077), (39, 6251), (40, 6254),