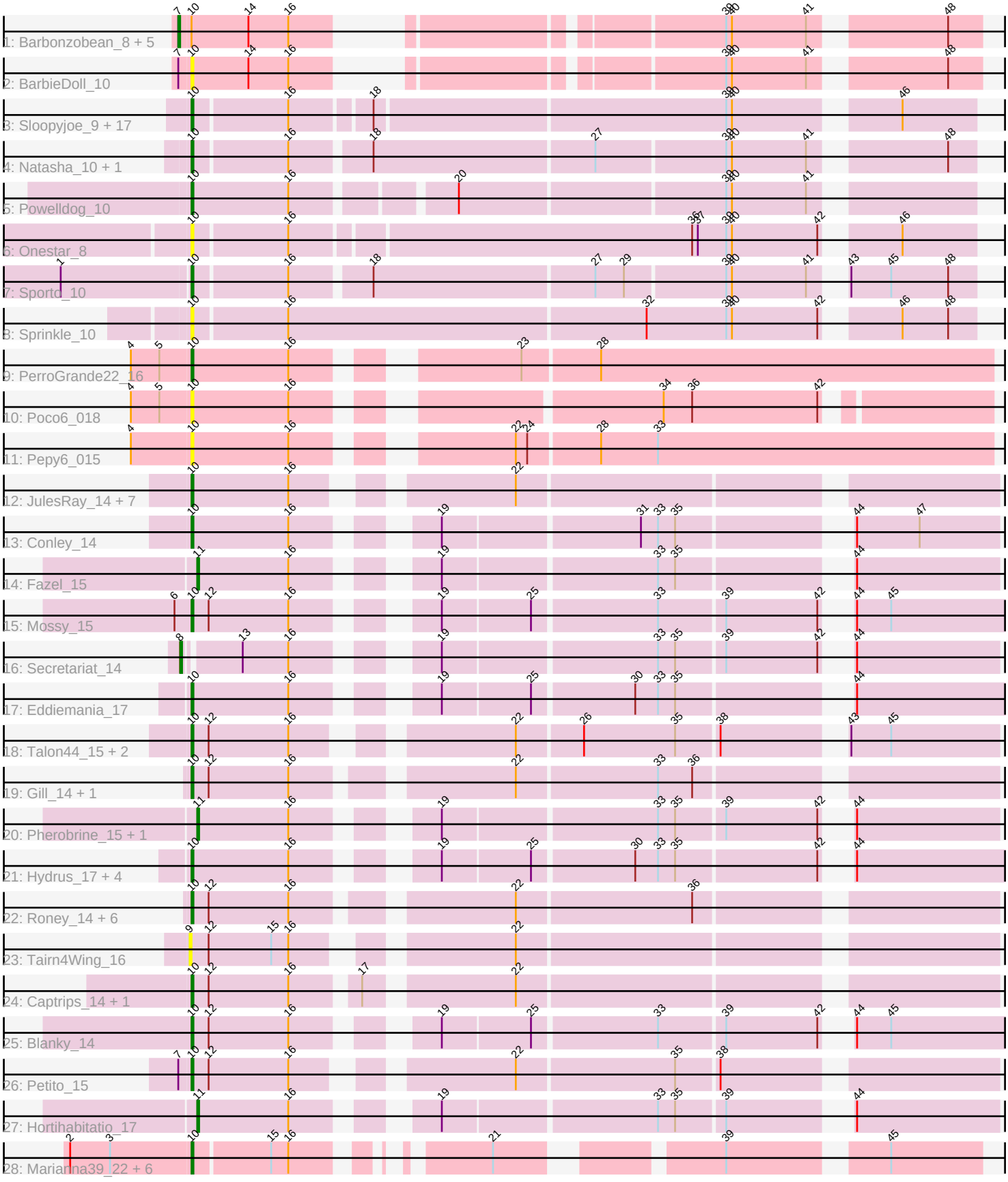
Pham 347535


1: Barbonzobean_8 + 5
2: BarbieDoll_10
3: Sloopyjoe_9 + 17
4: Natasha_10 + 1
5: Powelldog_10
6: Onestar_8
7: Sportd_10
8: Sprinkle_10
9: PerroGrande22_16
10: Poco6_018
11: Pepy6_015
12: JulesRay_14 + 7
13: Conley_14
14: Fazel_15
15: Mossy_15
16: Secretariat_14
17: Eddiemania_17
18: Talon44_15 + 2
19: Gill_14 + 1
20: Pherobrine_15 + 1
21: Hydrus_17 + 4
22: Roney_14 + 6
23: Tairn4Wing_16
24: Captrips_14 + 1
25: Blanky_14
26: Petito_15
27: Hortihabitatio_17
28: Marianna39_22 + 6

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 347535 Report

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

Pham number 347535 has 79 members, 17 are drafts.

Phages represented in each track:
• Track 1 : Barbonzobean_8, Muglass_8, Biscute_8, Lewando_9, Kinny_9, Renaldo_10
• Track 2 : BarbieDoll_10
• Track 3 : Sloopyjoe_9, Jeremy4pt0_9, HerbBucket_8, Spain_8, Linda_9, Djungelskog_9, Michelle_9, StarLord_9, Egad_9, ProfFrink_9, MrAaronian_9, Salk_9, Stayer_9, DoctorPepper_9, Shiba_9, Raunak_9, BronxBay_9, Boog_9
• Track 4 : Natasha_10, RustyBoy_10
• Track 5 : Powelldog_10
• Track 6 : Onestar_8
• Track 7 : Sporto_10
• Track 8 : Sprinkle_10
• Track 9 : PerroGrande22_16
• Track 10 : Poco6_018
• Track 11 : Pepy6_015
• Track 12 : JulesRay_14, Trufflozitus_14, Dancer_14, ChickyNuggy_15, Bugg_16, Artorias_14, Football_15, FortCran_14
• Track 13 : Conley_14
• Track 14 : Fazel_15
• Track 15 : Mossy_15
• Track 16 : Secretariat_14
• Track 17 : Eddiemania_17
• Track 18 : Talon44_15, SweetCrkHerbs_16, Perkunas_16
• Track 19 : Gill_14, Tanis_14
• Track 20 : Pherobrine_15, Mysticmoon_15
• Track 21 : Hydrus_17, Demure_15, Arataki_15, Kenosha_15, Zeph_17
• Track 22 : Roney_14, Magel_14, Capybara_14, Kerry_14, NoPickles_14, Gravy_14, Odesza_14
• Track 23 : Tairn4Wing_16
• Track 24 : Captrips_14, Avazak_14
• Track 25 : Blanky_14
• Track 26 : Petito_15
• Track 27 : Hortihabitatio_17
• Track 28 : Marianna39_22, Paella_21, JeNeSaisPas_20, Elver_21, Kureo_22, Qui_21, Gandionco_21

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

The start number called the most often in the published annotations is 10, it was called in 52 of the 62 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Arataki_15, Artorias_14, Avazak_14, BarbieDoll_10, Blanky_14, Boog_9, BronxBay_9, Bugg_16, Captrips_14, Capybara_14, ChickyNuggy_15, Conley_14, Dancer_14, Demure_15, Djungelskog_9, DoctorPepper_9, Eddiemania_17, Egad_9, Elver_21, Football_15, FortCran_14, Gandionco_21, Gill_14, Gravy_14, HerbBucket_8, Hydrus_17, JeNeSaisPas_20, Jeremy4pt0_9, JulesRay_14, Kenosha_15, Kerry_14, Kureo_22, Linda_9, Magel_14, Marianna39_22, Michelle_9, Mossy_15, MrAaronian_9, Natasha_10, NoPickles_14, Odesza_14, Onestar_8, Paella_21, Pepy6_015, Perkunas_16, PerroGrande22_16, Petito_15, Poco6_018, Powelldog_10, ProfFrink_9, Qui_21, Raunak_9, Roney_14, RustyBoy_10, Salk_9, Shiba_9, Sloopyjoe_9, Spain_8, Sporto_10, Sprinkle_10, StarLord_9, Stayer_9, SweetCrkHerbs_16, Talon44_15, Tanis_14, Trufflozitus_14, Zeph_17,

Genes that have the "Most Annotated" start but do not call it:
• Barbonzobean_8, Biscute_8, Kinny_9, Lewando_9, Muglass_8, Renaldo_10,

Genes that do not have the "Most Annotated" start:
• Fazel_15, Hortihabitatio_17, Mysticmoon_15, Pherobrine_15, Secretariat_14, Tairn4Wing_16,

Summary by start number:

Start 7:
• Found in 8 of 79 (10.1%) of genes in pham
• Manual Annotations of this start: 5 of 62
• Called 75.0% of time when present
• Phage (with cluster) where this start called: Barbonzobean_8 (AU6), Biscute_8 (AU6), Kinny_9 (AU6), Lewando_9 (AU6), Muglass_8 (AU6), Renaldo_10 (AU6),

Start 8:
• Found in 1 of 79 (1.3%) of genes in pham
• Manual Annotations of this start: 1 of 62
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Secretariat_14 (DJ),

Start 9:
• Found in 1 of 79 (1.3%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Tairn4Wing_16 (DJ),

Start 10:
• Found in 73 of 79 (92.4%) of genes in pham
• Manual Annotations of this start: 52 of 62
• Called 91.8% of time when present
• Phage (with cluster) where this start called: Arataki_15 (DJ), Artorias_14 (DJ), Avazak_14 (DJ), BarbieDoll_10 (AU6), Blanky_14 (DJ), Boog_9 (AW), BronxBay_9

(AW), Bugg_16 (DJ), Captrips_14 (DJ), Capybara_14 (DJ), ChickyNuggy_15 (DJ), Conley_14 (DJ), Dancer_14 (DJ), Demure_15 (DJ), Djungelskog_9 (AW), DoctorPepper_9 (AW), Eddiemania_17 (DJ), Egad_9 (AW), Elver_21 (FK), Football_15 (DJ), FortCran_14 (DJ), Gandionco_21 (FK), Gill_14 (DJ), Gravy_14 (DJ), HerbBucket_8 (AW), Hydrus_17 (DJ), JeNeSaisPas_20 (FK), Jeremy4pt0_9 (AW), JulesRay_14 (DJ), Kenosha_15 (DJ), Kerry_14 (DJ), Kureo_22 (FK), Linda_9 (AW), Magel_14 (DJ), Marianna39_22 (FK), Michelle_9 (AW), Mossy_15 (DJ), MrAaronian_9 (AW), Natasha_10 (AW), NoPickles_14 (DJ), Odesza_14 (DJ), Onestar_8 (AW), Paella_21 (FK), Pepy6_015 (CC), Perkunas_16 (DJ), PerroGrande22_16 (CC), Petito_15 (DJ), Poco6_018 (CC), Powelldog_10 (AW), ProfFrink_9 (AW), Qui_21 (FK), Raunak_9 (AW), Roney_14 (DJ), RustyBoy_10 (AW), Salk_9 (AW), Shiba_9 (AW), Sloopyjoe_9 (AW), Spain_8 (AW), Sporto_10 (AW), Sprinkle_10 (AW), StarLord_9 (AW), Stayer_9 (AW), SweetCrkHerbs_16 (DJ), Talon44_15 (DJ), Tanis_14 (DJ), Trufflozitus_14 (DJ), Zeph_17 (DJ),

Start 11:
• Found in 4 of 79 (5.1%) of genes in pham
• Manual Annotations of this start: 4 of 62
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Fazel_15 (DJ), Hortihabitatio_17 (DJ), Mysticmoon_15 (DJ), Pherobrine_15 (DJ),

Summary by clusters:

There are 5 clusters represented in this pham: CC, FK, DJ, AW, AU6,

Info for manual annotations of cluster AU6:
•Start number 7 was manually annotated 5 times for cluster AU6.

Info for manual annotations of cluster AW:
•Start number 10 was manually annotated 20 times for cluster AW.

Info for manual annotations of cluster CC:
•Start number 10 was manually annotated 1 time for cluster CC.

Info for manual annotations of cluster DJ:
•Start number 8 was manually annotated 1 time for cluster DJ.
•Start number 10 was manually annotated 27 times for cluster DJ.
•Start number 11 was manually annotated 4 times for cluster DJ.

Info for manual annotations of cluster FK:
•Start number 10 was manually annotated 4 times for cluster FK.

Gene Information:

Gene: Arataki_15 Start: 9833, Stop: 10210, Start Num: 10
Candidate Starts for Arataki_15:
(Start: 10 @9833 has 52 MA's), (16, 9884), (19, 9938), (25, 9983), (30, 10034), (33, 10046), (35, 10055), (42, 10127), (44, 10130),

Gene: Artorias_14 Start: 9261, Stop: 9638, Start Num: 10

Candidate Starts for Artorias_14:
(Start: 10 @9261 has 52 MA's), (16, 9312), (22, 9405),

Gene: Avazak_14 Start: 9262, Stop: 9645, Start Num: 10
Candidate Starts for Avazak_14:
(Start: 10 @9262 has 52 MA's), (12, 9271), (16, 9313), (17, 9343), (22, 9412),

Gene: BarbieDoll_10 Start: 5426, Stop: 5770, Start Num: 10
Candidate Starts for BarbieDoll_10:
(Start: 7 @5420 has 5 MA's), (Start: 10 @5426 has 52 MA's), (14, 5456), (16, 5477), (39, 5651), (40, 5654), (41, 5693), (48, 5753),

Gene: Barbonzobean_8 Start: 5116, Stop: 5466, Start Num: 7
Candidate Starts for Barbonzobean_8:
(Start: 7 @5116 has 5 MA's), (Start: 10 @5122 has 52 MA's), (14, 5152), (16, 5173), (39, 5347), (40, 5350), (41, 5389), (48, 5449),

Gene: Biscute_8 Start: 5116, Stop: 5466, Start Num: 7
Candidate Starts for Biscute_8:
(Start: 7 @5116 has 5 MA's), (Start: 10 @5122 has 52 MA's), (14, 5152), (16, 5173), (39, 5347), (40, 5350), (41, 5389), (48, 5449),

Gene: Blanky_14 Start: 9922, Stop: 10299, Start Num: 10
Candidate Starts for Blanky_14:
(Start: 10 @9922 has 52 MA's), (12, 9931), (16, 9973), (19, 10027), (25, 10072), (33, 10135), (39, 10168), (42, 10216), (44, 10219), (45, 10237),

Gene: Boog_9 Start: 5364, Stop: 5747, Start Num: 10
Candidate Starts for Boog_9:
(Start: 10 @5364 has 52 MA's), (16, 5412), (18, 5451), (39, 5631), (40, 5634), (46, 5709),

Gene: BronxBay_9 Start: 5363, Stop: 5746, Start Num: 10
Candidate Starts for BronxBay_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: Bugg_16 Start: 9274, Stop: 9651, Start Num: 10
Candidate Starts for Bugg_16:
(Start: 10 @9274 has 52 MA's), (16, 9325), (22, 9418),

Gene: Captrips_14 Start: 9262, Stop: 9645, Start Num: 10
Candidate Starts for Captrips_14:
(Start: 10 @9262 has 52 MA's), (12, 9271), (16, 9313), (17, 9343), (22, 9412),

Gene: Capybara_14 Start: 8981, Stop: 9364, Start Num: 10
Candidate Starts for Capybara_14:
(Start: 10 @8981 has 52 MA's), (12, 8990), (16, 9032), (22, 9131), (36, 9221),

Gene: ChickyNuggy_15 Start: 8979, Stop: 9356, Start Num: 10
Candidate Starts for ChickyNuggy_15:
(Start: 10 @8979 has 52 MA's), (16, 9030), (22, 9123),

Gene: Conley_14 Start: 9292, Stop: 9663, Start Num: 10
Candidate Starts for Conley_14:

(Start: 10 @9292 has 52 MA's), (16, 9343), (19, 9397), (31, 9496), (33, 9505), (35, 9514), (44, 9589), (47, 9622),

Gene: Dancer_14 Start: 8967, Stop: 9344, Start Num: 10
Candidate Starts for Dancer_14:
(Start: 10 @8967 has 52 MA's), (16, 9018), (22, 9111),

Gene: Demure_15 Start: 9833, Stop: 10210, Start Num: 10
Candidate Starts for Demure_15:
(Start: 10 @9833 has 52 MA's), (16, 9884), (19, 9938), (25, 9983), (30, 10034), (33, 10046), (35, 10055), (42, 10127), (44, 10130),

Gene: Djungelskog_9 Start: 5363, Stop: 5746, Start Num: 10
Candidate Starts for Djungelskog_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: DoctorPepper_9 Start: 5363, Stop: 5746, Start Num: 10
Candidate Starts for DoctorPepper_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: Eddiemania_17 Start: 11431, Stop: 11808, Start Num: 10
Candidate Starts for Eddiemania_17:
(Start: 10 @11431 has 52 MA's), (16, 11482), (19, 11536), (25, 11581), (30, 11632), (33, 11644), (35, 11653), (44, 11728),

Gene: Egad_9 Start: 5364, Stop: 5747, Start Num: 10
Candidate Starts for Egad_9:
(Start: 10 @5364 has 52 MA's), (16, 5412), (18, 5451), (39, 5631), (40, 5634), (46, 5709),

Gene: Elver_21 Start: 12192, Stop: 12542, Start Num: 10
Candidate Starts for Elver_21:
(2, 12129), (3, 12150), (Start: 10 @12192 has 52 MA's), (15, 12231), (16, 12240), (21, 12327), (39, 12423), (45, 12495),

Gene: Fazel_15 Start: 10968, Stop: 11336, Start Num: 11
Candidate Starts for Fazel_15:
(Start: 11 @10968 has 4 MA's), (16, 11016), (19, 11070), (33, 11178), (35, 11187), (44, 11262),

Gene: Football_15 Start: 8979, Stop: 9356, Start Num: 10
Candidate Starts for Football_15:
(Start: 10 @8979 has 52 MA's), (16, 9030), (22, 9123),

Gene: FortCran_14 Start: 9261, Stop: 9638, Start Num: 10
Candidate Starts for FortCran_14:
(Start: 10 @9261 has 52 MA's), (16, 9312), (22, 9405),

Gene: Gandionco_21 Start: 12709, Stop: 13044, Start Num: 10
Candidate Starts for Gandionco_21:
(2, 12646), (3, 12667), (Start: 10 @12709 has 52 MA's), (15, 12748), (16, 12757), (21, 12829), (39, 12925), (45, 12997),

Gene: Gill_14 Start: 8981, Stop: 9364, Start Num: 10
Candidate Starts for Gill_14:

(Start: 10 @8981 has 52 MA's), (12, 8990), (16, 9032), (22, 9131), (33, 9203), (36, 9221),

Gene: Gravy_14 Start: 8981, Stop: 9364, Start Num: 10
Candidate Starts for Gravy_14:
(Start: 10 @8981 has 52 MA's), (12, 8990), (16, 9032), (22, 9131), (36, 9221),

Gene: HerbBucket_8 Start: 5364, Stop: 5747, Start Num: 10
Candidate Starts for HerbBucket_8:
(Start: 10 @5364 has 52 MA's), (16, 5412), (18, 5451), (39, 5631), (40, 5634), (46, 5709),

Gene: Hortihabitatio_17 Start: 11339, Stop: 11707, Start Num: 11
Candidate Starts for Hortihabitatio_17:
(Start: 11 @11339 has 4 MA's), (16, 11387), (19, 11441), (33, 11549), (35, 11558), (39, 11582), (44, 11633),

Gene: Hydrus_17 Start: 11248, Stop: 11625, Start Num: 10
Candidate Starts for Hydrus_17:
(Start: 10 @11248 has 52 MA's), (16, 11299), (19, 11353), (25, 11398), (30, 11449), (33, 11461), (35, 11470), (42, 11542), (44, 11545),

Gene: JeNeSaisPas_20 Start: 12727, Stop: 13077, Start Num: 10
Candidate Starts for JeNeSaisPas_20:
(2, 12664), (3, 12685), (Start: 10 @12727 has 52 MA's), (15, 12766), (16, 12775), (21, 12862), (39, 12958), (45, 13030),

Gene: Jeremy4pt0_9 Start: 5363, Stop: 5746, Start Num: 10
Candidate Starts for Jeremy4pt0_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: JulesRay_14 Start: 9261, Stop: 9638, Start Num: 10
Candidate Starts for JulesRay_14:
(Start: 10 @9261 has 52 MA's), (16, 9312), (22, 9405),

Gene: Kenosha_15 Start: 9849, Stop: 10226, Start Num: 10
Candidate Starts for Kenosha_15:
(Start: 10 @9849 has 52 MA's), (16, 9900), (19, 9954), (25, 9999), (30, 10050), (33, 10062), (35, 10071), (42, 10143), (44, 10146),

Gene: Kerry_14 Start: 8981, Stop: 9364, Start Num: 10
Candidate Starts for Kerry_14:
(Start: 10 @8981 has 52 MA's), (12, 8990), (16, 9032), (22, 9131), (36, 9221),

Gene: Kinny_9 Start: 5420, Stop: 5770, Start Num: 7
Candidate Starts for Kinny_9:
(Start: 7 @5420 has 5 MA's), (Start: 10 @5426 has 52 MA's), (14, 5456), (16, 5477), (39, 5651), (40, 5654), (41, 5693), (48, 5753),

Gene: Kureo_22 Start: 12559, Stop: 12894, Start Num: 10
Candidate Starts for Kureo_22:
(2, 12496), (3, 12517), (Start: 10 @12559 has 52 MA's), (15, 12598), (16, 12607), (21, 12679), (39, 12775), (45, 12847),

Gene: Lewando_9 Start: 5419, Stop: 5769, Start Num: 7

Candidate Starts for Lewando_9:
(Start: 7 @5419 has 5 MA's), (Start: 10 @5425 has 52 MA's), (14, 5455), (16, 5476), (39, 5650), (40, 5653), (41, 5692), (48, 5752),

Gene: Linda_9 Start: 5363, Stop: 5746, Start Num: 10
Candidate Starts for Linda_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: Magel_14 Start: 8981, Stop: 9364, Start Num: 10
Candidate Starts for Magel_14:
(Start: 10 @8981 has 52 MA's), (12, 8990), (16, 9032), (22, 9131), (36, 9221),

Gene: Marianna39_22 Start: 12709, Stop: 13044, Start Num: 10
Candidate Starts for Marianna39_22:
(2, 12646), (3, 12667), (Start: 10 @12709 has 52 MA's), (15, 12748), (16, 12757), (21, 12829), (39, 12925), (45, 12997),

Gene: Michelle_9 Start: 5363, Stop: 5746, Start Num: 10
Candidate Starts for Michelle_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: Mossy_15 Start: 10137, Stop: 10514, Start Num: 10
Candidate Starts for Mossy_15:
(6, 10128), (Start: 10 @10137 has 52 MA's), (12, 10146), (16, 10188), (19, 10242), (25, 10287), (33, 10350), (39, 10383), (42, 10431), (44, 10434), (45, 10452),

Gene: MrAaronian_9 Start: 5363, Stop: 5746, Start Num: 10
Candidate Starts for MrAaronian_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: Muglass_8 Start: 5116, Stop: 5466, Start Num: 7
Candidate Starts for Muglass_8:
(Start: 7 @5116 has 5 MA's), (Start: 10 @5122 has 52 MA's), (14, 5152), (16, 5173), (39, 5347), (40, 5350), (41, 5389), (48, 5449),

Gene: Mysticmoon_15 Start: 9818, Stop: 10186, Start Num: 11
Candidate Starts for Mysticmoon_15:
(Start: 11 @9818 has 4 MA's), (16, 9866), (19, 9920), (33, 10028), (35, 10037), (39, 10061), (42, 10109), (44, 10112),

Gene: Natasha_10 Start: 6498, Stop: 6881, Start Num: 10
Candidate Starts for Natasha_10:
(Start: 10 @6498 has 52 MA's), (16, 6546), (18, 6585), (27, 6699), (39, 6765), (40, 6768), (41, 6807), (48, 6867),

Gene: NoPickles_14 Start: 8981, Stop: 9364, Start Num: 10
Candidate Starts for NoPickles_14:
(Start: 10 @8981 has 52 MA's), (12, 8990), (16, 9032), (22, 9131), (36, 9221),

Gene: Odesza_14 Start: 8981, Stop: 9364, Start Num: 10
Candidate Starts for Odesza_14:
(Start: 10 @8981 has 52 MA's), (12, 8990), (16, 9032), (22, 9131), (36, 9221),

Gene: Onestar_8 Start: 5384, Stop: 5770, Start Num: 10
Candidate Starts for Onestar_8:
(Start: 10 @5384 has 52 MA's), (16, 5432), (36, 5636), (37, 5639), (39, 5654), (40, 5657), (42, 5702), (46, 5732),

Gene: Paella_21 Start: 12194, Stop: 12544, Start Num: 10
Candidate Starts for Paella_21:
(2, 12131), (3, 12152), (Start: 10 @12194 has 52 MA's), (15, 12233), (16, 12242), (21, 12329), (39, 12425), (45, 12497),

Gene: Pepy6_015 Start: 14185, Stop: 14574, Start Num: 10
Candidate Starts for Pepy6_015:
(4, 14155), (Start: 10 @14185 has 52 MA's), (16, 14236), (22, 14326), (24, 14332), (28, 14368), (33, 14398),

Gene: Perkunas_16 Start: 9780, Stop: 10157, Start Num: 10
Candidate Starts for Perkunas_16:
(Start: 10 @9780 has 52 MA's), (12, 9789), (16, 9831), (22, 9924), (26, 9957), (35, 10005), (38, 10026), (43, 10080), (45, 10101),

Gene: PerroGrande22_16 Start: 14404, Stop: 14793, Start Num: 10
Candidate Starts for PerroGrande22_16:
(4, 14374), (5, 14389), (Start: 10 @14404 has 52 MA's), (16, 14455), (23, 14548), (28, 14587),

Gene: Petito_15 Start: 9485, Stop: 9862, Start Num: 10
Candidate Starts for Petito_15:
(Start: 7 @9479 has 5 MA's), (Start: 10 @9485 has 52 MA's), (12, 9494), (16, 9536), (22, 9629), (35, 9710), (38, 9731),

Gene: Pherobrine_15 Start: 9816, Stop: 10184, Start Num: 11
Candidate Starts for Pherobrine_15:
(Start: 11 @9816 has 4 MA's), (16, 9864), (19, 9918), (33, 10026), (35, 10035), (39, 10059), (42, 10107), (44, 10110),

Gene: Poco6_018 Start: 17635, Stop: 18006, Start Num: 10
Candidate Starts for Poco6_018:
(4, 17605), (5, 17620), (Start: 10 @17635 has 52 MA's), (16, 17686), (34, 17848), (36, 17863), (42, 17929),

Gene: Powelldog_10 Start: 6411, Stop: 6788, Start Num: 10
Candidate Starts for Powelldog_10:
(Start: 10 @6411 has 52 MA's), (16, 6462), (20, 6537), (39, 6672), (40, 6675), (41, 6714),

Gene: ProfFrink_9 Start: 5363, Stop: 5746, Start Num: 10
Candidate Starts for ProfFrink_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: Qui_21 Start: 12194, Stop: 12544, Start Num: 10
Candidate Starts for Qui_21:
(2, 12131), (3, 12152), (Start: 10 @12194 has 52 MA's), (15, 12233), (16, 12242), (21, 12329), (39, 12425), (45, 12497),

Gene: Raunak_9 Start: 5363, Stop: 5746, Start Num: 10

Candidate Starts for Raunak_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: Renaldo_10 Start: 5420, Stop: 5770, Start Num: 7
Candidate Starts for Renaldo_10:
(Start: 7 @5420 has 5 MA's), (Start: 10 @5426 has 52 MA's), (14, 5456), (16, 5477), (39, 5651), (40, 5654), (41, 5693), (48, 5753),

Gene: Roney_14 Start: 8981, Stop: 9364, Start Num: 10
Candidate Starts for Roney_14:
(Start: 10 @8981 has 52 MA's), (12, 8990), (16, 9032), (22, 9131), (36, 9221),

Gene: RustyBoy_10 Start: 6498, Stop: 6881, Start Num: 10
Candidate Starts for RustyBoy_10:
(Start: 10 @6498 has 52 MA's), (16, 6546), (18, 6585), (27, 6699), (39, 6765), (40, 6768), (41, 6807), (48, 6867),

Gene: Salk_9 Start: 5363, Stop: 5746, Start Num: 10
Candidate Starts for Salk_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: Secretariat_14 Start: 9438, Stop: 9809, Start Num: 8
Candidate Starts for Secretariat_14:
(Start: 8 @9438 has 1 MA's), (13, 9465), (16, 9489), (19, 9543), (33, 9651), (35, 9660), (39, 9684), (42, 9732), (44, 9735),

Gene: Shiba_9 Start: 5363, Stop: 5746, Start Num: 10
Candidate Starts for Shiba_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: Sloopyjoe_9 Start: 5364, Stop: 5747, Start Num: 10
Candidate Starts for Sloopyjoe_9:
(Start: 10 @5364 has 52 MA's), (16, 5412), (18, 5451), (39, 5631), (40, 5634), (46, 5709),

Gene: Spain_8 Start: 5363, Stop: 5746, Start Num: 10
Candidate Starts for Spain_8:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: Sporto_10 Start: 6615, Stop: 6998, Start Num: 10
Candidate Starts for Sporto_10:
(1, 6549), (Start: 10 @6615 has 52 MA's), (16, 6663), (18, 6702), (27, 6816), (29, 6831), (39, 6882), (40, 6885), (41, 6924), (43, 6933), (45, 6954), (48, 6984),

Gene: Sprinkle_10 Start: 7286, Stop: 7678, Start Num: 10
Candidate Starts for Sprinkle_10:
(Start: 10 @7286 has 52 MA's), (16, 7334), (32, 7520), (39, 7562), (40, 7565), (42, 7610), (46, 7640), (48, 7664),

Gene: StarLord_9 Start: 5364, Stop: 5747, Start Num: 10
Candidate Starts for StarLord_9:
(Start: 10 @5364 has 52 MA's), (16, 5412), (18, 5451), (39, 5631), (40, 5634), (46, 5709),

Gene: Stayer_9 Start: 5363, Stop: 5746, Start Num: 10

Candidate Starts for Stayer_9:
(Start: 10 @5363 has 52 MA's), (16, 5411), (18, 5450), (39, 5630), (40, 5633), (46, 5708),

Gene: SweetCrkHerbs_16 Start: 9456, Stop: 9833, Start Num: 10
Candidate Starts for SweetCrkHerbs_16:
(Start: 10 @9456 has 52 MA's), (12, 9465), (16, 9507), (22, 9600), (26, 9633), (35, 9681), (38, 9702), (43, 9756), (45, 9777),

Gene: Tairn4Wing_16 Start: 9260, Stop: 9637, Start Num: 9
Candidate Starts for Tairn4Wing_16:
(9, 9260), (12, 9269), (15, 9302), (16, 9311), (22, 9404),

Gene: Talon44_15 Start: 9456, Stop: 9833, Start Num: 10
Candidate Starts for Talon44_15:
(Start: 10 @9456 has 52 MA's), (12, 9465), (16, 9507), (22, 9600), (26, 9633), (35, 9681), (38, 9702), (43, 9756), (45, 9777),

Gene: Tanis_14 Start: 8831, Stop: 9214, Start Num: 10
Candidate Starts for Tanis_14:
(Start: 10 @8831 has 52 MA's), (12, 8840), (16, 8882), (22, 8981), (33, 9053), (36, 9071),

Gene: Trufflozitus_14 Start: 9261, Stop: 9638, Start Num: 10
Candidate Starts for Trufflozitus_14:
(Start: 10 @9261 has 52 MA's), (16, 9312), (22, 9405),

Gene: Zeph_17 Start: 11230, Stop: 11607, Start Num: 10
Candidate Starts for Zeph_17:
(Start: 10 @11230 has 52 MA's), (16, 11281), (19, 11335), (25, 11380), (30, 11431), (33, 11443), (35, 11452), (42, 11524), (44, 11527),