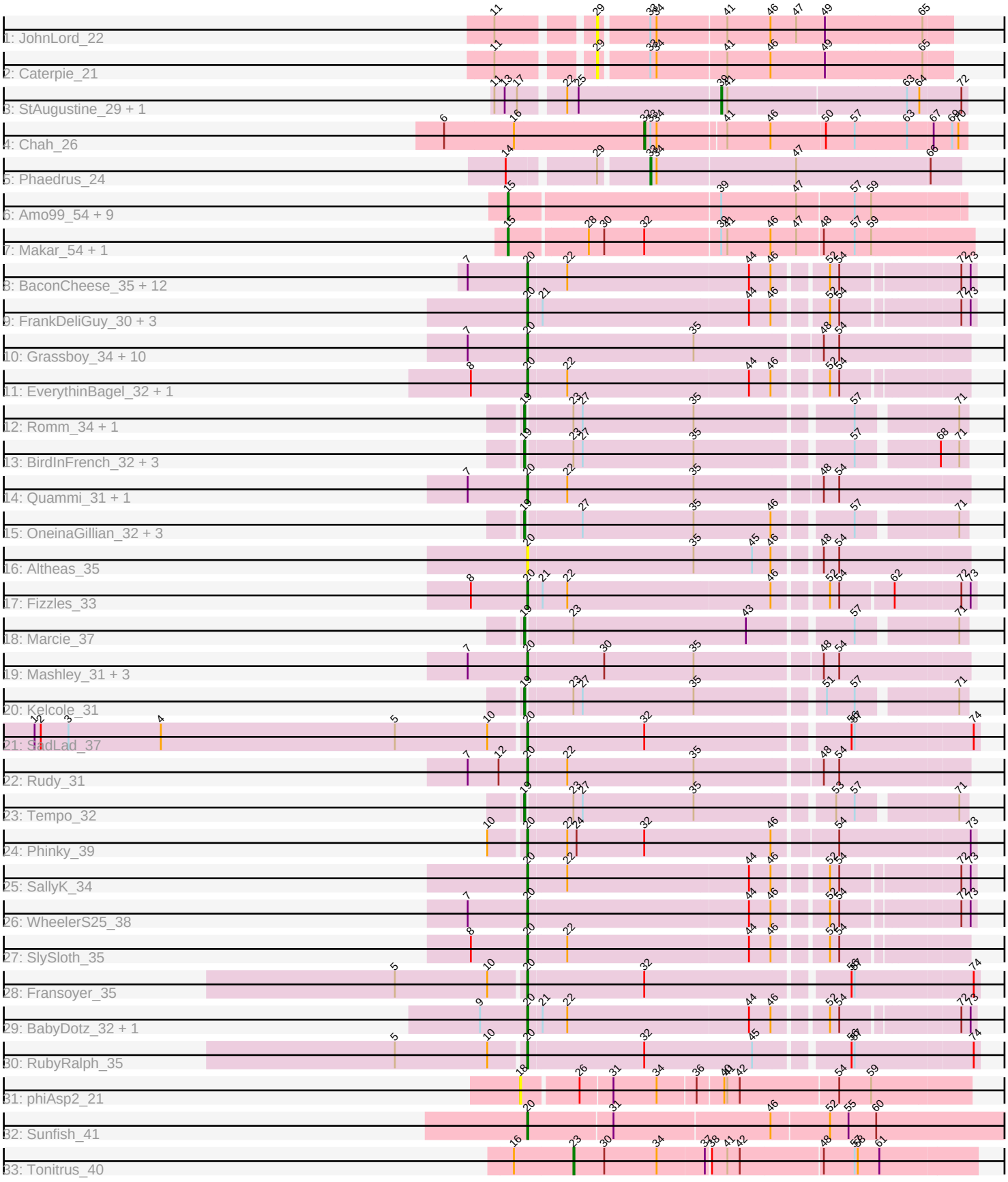
Pham 347521


1: JohnLord_22
2: Caterpie_21
3: StAugustine_29 + 1
4: Chah_26
5: Phaedrus_24
6: Amo99_54 + 9
7: Makar_54 + 1
8: BaconCheese_35 + 12
9: FrankDeliGuy_30 + 3
10: Grassboy_34 + 10
11: EverythinBagel_32 + 1
12: Romm_34 + 1
13: BirdInFrench_32 + 3
14: Quammi_31 + 1
15: OneinaGillian_32 + 3
16: Altheas_35
17: Fizzles_33
18: Marcie_37
19: Mashley_31 + 3
20: Kelcole_31
21: SadLad_37
22: Rudy_31
23: Tempo_32
24: Phinky_39
25: SallyK_34
26: WheelerS25_38
27: SlySloth_35
28: Fransoyer_35
29: BabyDotz_32 + 1
30: RubyRalph_35
31: phiAsp2_21
32: Sunfish_41
33: Tonitrus_40

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 347521 Report

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

Pham number 347521 has 82 members, 13 are drafts.

Phages represented in each track:
- Track 1 : JohnLord_22
- Track 2 : Caterpie_21
- Track 3 : StAugustine_29, Causa_31
- Track 4 : Chah_26
- Track 5 : Phaedrus_24
- Track 6 : Amo99_54, Jollymon_53, Sting_52, Soos_49, Stillion_52, KingstonB_51, DonTron_53, ColdSoup_54, Purplicious_52, Grumio_53
- Track 7 : Makar_54, Clawz_53
- Track 8 : BaconCheese_35, DonaldDuck_32, MorillMayhem_33, Phabia_33, Lonelysoil_32, Wayne3_34, Wheelie_32, Casend_34, Sillytadpoles_33, Llemily_32, Teehee_34, Jehoshaphat_35, Zhafia_35
- Track 9 : FrankDeliGuy_30, Tissue_33, ZestyBestie_31, Judebell_35
- Track 10 : Grassboy_34, Nike_33, Mentos_35, StrawberryJamm_35, Hyperion_32, Namago_33, Zagie_33, Rowlf_29, Kyva_35, Mila11_35, Squash_35
- Track 11 : EverythinBagel_32, LilCahh_32
- Track 12 : Romm_34, RobinRose_34
- Track 13 : BirdInFrench_32, Spiderpig_32, Pepe25_31, Wilca_32
- Track 14 : Quammi_31, Viceroy_32
- Track 15 : OneinaGillian_32, Fregley_33, KillerQueen_33, CandC_31
- Track 16 : Altheas_35
- Track 17 : Fizzles_33
- Track 18 : Marcie_37
- Track 19 : Mashley_31, Gazebo_32, Blab_31, AluminumJesus_31
- Track 20 : Kelcole_31
- Track 21 : SadLad_37
- Track 22 : Rudy_31
- Track 23 : Tempo_32
- Track 24 : Phinky_39
- Track 25 : SallyK_34
- Track 26 : WheelerS25_38
- Track 27 : SlySloth_35
- Track 28 : Fransoyer_35
- Track 29 : BabyDotz_32, Statler_34
- Track 30 : RubyRalph_35
- Track 31 : phiAsp2_21
- Track 32 : Sunfish_41
- Track 33 : Tonitrus_40

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

The start number called the most often in the published annotations is 20, it was called in 46 of the 69 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Altheas_35, AluminumJesus_31, BabyDotz_32, BaconCheese_35, Blab_31, Casend_34, DonaldDuck_32, EverythinBagel_32, Fizzles_33, FrankDeliGuy_30, Fransoyer_35, Gazebo_32, Grassboy_34, Hyperion_32, Jehoshaphat_35, Judebell_35, Kyva_35, LilCahh_32, Llemily_32, Lonelysoil_32, Mashley_31, Mentos_35, Mila11_35, MorillMayhem_33, Namago_33, Nike_33, Phabia_33, Phinky_39, Quammi_31, Rowlf_29, RubyRalph_35, Rudy_31, SadLad_37, SallyK_34, Sillytadpoles_33, SlySloth_35, Squash_35, Statler_34, StrawberryJamm_35, Sunfish_41, Teehee_34, Tissue_33, Viceroy_32, Wayne3_34, WheelerS25_38, Wheelie_32, Zagie_33, ZestyBestie_31, Zhafia_35,

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

Genes that do not have the "Most Annotated" start:
• Amo99_54, BirdInFrench_32, CandC_31, Caterpie_21, Causa_31, Chah_26, Clawz_53, ColdSoup_54, DonTron_53, Fregley_33, Grumio_53, JohnLord_22, Jollymon_53, Kelcole_31, KillerQueen_33, KingstonB_51, Makar_54, Marcie_37, OneinaGillian_32, Pepe25_31, Phaedrus_24, Purplicious_52, RobinRose_34, Romm_34, Soos_49, Spiderpig_32, StAugustine_29, Stillion_52, Sting_52, Tempo_32, Tonitrus_40, Wilca_32, phiAsp2_21,

Summary by start number:

Start 15:
• Found in 12 of 82 (14.6%) of genes in pham
• Manual Annotations of this start: 7 of 69
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amo99_54 (CP), Clawz_53 (CP), ColdSoup_54 (CP), DonTron_53 (CP), Grumio_53 (CP), Jollymon_53 (CP), KingstonB_51 (CP), Makar_54 (CP), Purplicious_52 (CP), Soos_49 (CP), Stillion_52 (CP), Sting_52 (CP),

Start 18:
• Found in 1 of 82 (1.2%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: phiAsp2_21 (singleton),

Start 19:
• Found in 13 of 82 (15.9%) of genes in pham
• Manual Annotations of this start: 11 of 69
• Called 100.0% of time when present

• Phage (with cluster) where this start called: BirdInFrench_32 (EG), CandC_31 (EG), Fregley_33 (EG), Kelcole_31 (EG), KillerQueen_33 (EG), Marcie_37 (EG), OneinaGillian_32 (EG), Pepe25_31 (EG), RobinRose_34 (EG), Romm_34 (EG), Spiderpig_32 (EG), Tempo_32 (EG), Wilca_32 (EG),

Start 20:
• Found in 49 of 82 (59.8%) of genes in pham
• Manual Annotations of this start: 46 of 69
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Altheas_35 (EG), AluminumJesus_31 (EG), BabyDotz_32 (EG), BaconCheese_35 (EG), Blab_31 (EG), Casend_34 (EG), DonaldDuck_32 (EG), EverythinBagel_32 (EG), Fizzles_33 (EG), FrankDeliGuy_30 (EG), Fransoyer_35 (EG), Gazebo_32 (EG), Grassboy_34 (EG), Hyperion_32 (EG), Jehoshaphat_35 (EG), Judebell_35 (EG), Kyva_35 (EG), LilCahh_32 (EG), Llemily_32 (EG), Lonelysoil_32 (EG), Mashley_31 (EG), Mentos_35 (EG), Mila11_35 (EG), MorillMayhem_33 (EG), Namago_33 (EG), Nike_33 (EG), Phabia_33 (EG), Phinky_39 (EG), Quammi_31 (EG), Rowlf_29 (EG), RubyRalph_35 (EG), Rudy_31 (EG), SadLad_37 (EG), SallyK_34 (EG), Sillytadpoles_33 (EG), SlySloth_35 (EG), Squash_35 (EG), Statler_34 (EG), StrawberryJamm_35 (EG), Sunfish_41 (singleton), Teehee_34 (EG), Tissue_33 (EG), Viceroy_32 (EG), Wayne3_34 (EG), WheelerS25_38 (EG), Wheelie_32 (EG), Zagie_33 (EG), ZestyBestie_31 (EG), Zhafia_35 (EG),

Start 23:
• Found in 10 of 82 (12.2%) of genes in pham
• Manual Annotations of this start: 1 of 69
• Called 10.0% of time when present
• Phage (with cluster) where this start called: Tonitrus_40 (singleton),

Start 29:
• Found in 3 of 82 (3.7%) of genes in pham
• No Manual Annotations of this start.
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Caterpie_21 (AD), JohnLord_22 (AD),

Start 32:
• Found in 7 of 82 (8.5%) of genes in pham
• Manual Annotations of this start: 1 of 69
• Called 14.3% of time when present
• Phage (with cluster) where this start called: Chah_26 (B1),

Start 33:
• Found in 4 of 82 (4.9%) of genes in pham
• Manual Annotations of this start: 1 of 69
• Called 25.0% of time when present
• Phage (with cluster) where this start called: Phaedrus_24 (B3),

Start 39:
• Found in 14 of 82 (17.1%) of genes in pham
• Manual Annotations of this start: 2 of 69
• Called 14.3% of time when present
• Phage (with cluster) where this start called: Causa_31 (AI), StAugustine_29 (AI),

Summary by clusters:

There are 7 clusters represented in this pham: singleton, AD, AI, EG, B1, B3, CP,

Info for manual annotations of cluster AI:
•Start number 39 was manually annotated 2 times for cluster AI.

Info for manual annotations of cluster B1:
•Start number 32 was manually annotated 1 time for cluster B1.

Info for manual annotations of cluster B3:
•Start number 33 was manually annotated 1 time for cluster B3.

Info for manual annotations of cluster CP:
•Start number 15 was manually annotated 7 times for cluster CP.

Info for manual annotations of cluster EG:
•Start number 19 was manually annotated 11 times for cluster EG.
•Start number 20 was manually annotated 45 times for cluster EG.

Gene Information:

Gene: Altheas_35 Start: 22433, Stop: 22843, Start Num: 20
Candidate Starts for Altheas_35:
(Start: 20 @22433 has 46 MA's), (35, 22592), (45, 22649), (46, 22667), (48, 22706), (54, 22721),

Gene: AluminumJesus_31 Start: 21927, Stop: 22340, Start Num: 20
Candidate Starts for AluminumJesus_31:
(7, 21870), (Start: 20 @21927 has 46 MA's), (30, 21999), (35, 22086), (48, 22203), (54, 22218),

Gene: Amo99_54 Start: 29535, Stop: 29960, Start Num: 15
Candidate Starts for Amo99_54:
(Start: 15 @29535 has 7 MA's), (Start: 39 @29733 has 2 MA's), (47, 29805), (57, 29859), (59, 29874),

Gene: BabyDotz_32 Start: 22195, Stop: 22599, Start Num: 20
Candidate Starts for BabyDotz_32:
(9, 22150), (Start: 20 @22195 has 46 MA's), (21, 22207), (22, 22231), (44, 22405), (46, 22426), (52, 22471), (54, 22480), (72, 22585), (73, 22594),

Gene: BaconCheese_35 Start: 23444, Stop: 23848, Start Num: 20
Candidate Starts for BaconCheese_35:
(7, 23387), (Start: 20 @23444 has 46 MA's), (22, 23480), (44, 23654), (46, 23675), (52, 23720), (54, 23729), (72, 23834), (73, 23843),

Gene: BirdInFrench_32 Start: 20827, Stop: 21222, Start Num: 19
Candidate Starts for BirdInFrench_32:
(Start: 19 @20827 has 11 MA's), (Start: 23 @20869 has 1 MA's), (27, 20878), (35, 20986), (57, 21127), (68, 21196), (71, 21214),

Gene: Blab_31 Start: 21852, Stop: 22265, Start Num: 20

Candidate Starts for Blab_31:
(7, 21795), (Start: 20 @21852 has 46 MA's), (30, 21924), (35, 22011), (48, 22128), (54, 22143),

Gene: CandC_31 Start: 20527, Stop: 20922, Start Num: 19
Candidate Starts for CandC_31:
(Start: 19 @20527 has 11 MA's), (27, 20578), (35, 20686), (46, 20761), (57, 20827), (71, 20914),

Gene: Casend_34 Start: 22604, Stop: 23008, Start Num: 20
Candidate Starts for Casend_34:
(7, 22547), (Start: 20 @22604 has 46 MA's), (22, 22640), (44, 22814), (46, 22835), (52, 22880), (54, 22889), (72, 22994), (73, 23003),

Gene: Caterpie_21 Start: 16495, Stop: 16821, Start Num: 29
Candidate Starts for Caterpie_21:
(11, 16417), (29, 16495), (Start: 33 @16540 has 1 MA's), (34, 16546), (41, 16612), (46, 16654), (49, 16705), (65, 16795),

Gene: Causa_31 Start: 21851, Stop: 22081, Start Num: 39
Candidate Starts for Causa_31:
(11, 21647), (13, 21656), (17, 21668), (22, 21707), (25, 21716), (Start: 39 @21851 has 2 MA's), (41, 21857), (63, 22025), (64, 22037), (72, 22076),

Gene: Chah_26 Start: 18818, Stop: 19117, Start Num: 32
Candidate Starts for Chah_26:
(6, 18629), (16, 18695), (Start: 32 @18818 has 1 MA's), (Start: 33 @18824 has 1 MA's), (34, 18830), (41, 18893), (46, 18935), (50, 18986), (57, 19013), (63, 19061), (67, 19085), (69, 19103), (70, 19109),

Gene: Clawz_53 Start: 29439, Stop: 29873, Start Num: 15
Candidate Starts for Clawz_53:
(Start: 15 @29439 has 7 MA's), (28, 29511), (30, 29526), (Start: 32 @29565 has 1 MA's), (Start: 39 @29637 has 2 MA's), (41, 29643), (46, 29685), (47, 29709), (48, 29733), (57, 29763), (59, 29778),

Gene: ColdSoup_54 Start: 29535, Stop: 29960, Start Num: 15
Candidate Starts for ColdSoup_54:
(Start: 15 @29535 has 7 MA's), (Start: 39 @29733 has 2 MA's), (47, 29805), (57, 29859), (59, 29874),

Gene: DonTron_53 Start: 29575, Stop: 30000, Start Num: 15
Candidate Starts for DonTron_53:
(Start: 15 @29575 has 7 MA's), (Start: 39 @29773 has 2 MA's), (47, 29845), (57, 29899), (59, 29914),

Gene: DonaldDuck_32 Start: 21950, Stop: 22354, Start Num: 20
Candidate Starts for DonaldDuck_32:
(7, 21893), (Start: 20 @21950 has 46 MA's), (22, 21986), (44, 22160), (46, 22181), (52, 22226), (54, 22235), (72, 22340), (73, 22349),

Gene: EverythinBagel_32 Start: 22338, Stop: 22736, Start Num: 20
Candidate Starts for EverythinBagel_32:
(8, 22284), (Start: 20 @22338 has 46 MA's), (22, 22374), (44, 22548), (46, 22569), (52, 22614), (54, 22623),

Gene: Fizzles_33 Start: 21660, Stop: 22067, Start Num: 20
Candidate Starts for Fizzles_33:

(8, 21606), (Start: 20 @21660 has 46 MA's), (21, 21672), (22, 21696), (46, 21891), (52, 21936), (54, 21945), (62, 21993), (72, 22053), (73, 22062),

Gene: FrankDeliGuy_30 Start: 21910, Stop: 22314, Start Num: 20
Candidate Starts for FrankDeliGuy_30:
(Start: 20 @21910 has 46 MA's), (21, 21922), (44, 22120), (46, 22141), (52, 22186), (54, 22195), (72, 22300), (73, 22309),

Gene: Fransoyer_35 Start: 21775, Stop: 22191, Start Num: 20
Candidate Starts for Fransoyer_35:
(5, 21652), (10, 21742), (Start: 20 @21775 has 46 MA's), (Start: 32 @21886 has 1 MA's), (56, 22072), (57, 22075), (74, 22186),

Gene: Fregley_33 Start: 21097, Stop: 21492, Start Num: 19
Candidate Starts for Fregley_33:
(Start: 19 @21097 has 11 MA's), (27, 21148), (35, 21256), (46, 21331), (57, 21397), (71, 21484),

Gene: Gazebo_32 Start: 22390, Stop: 22803, Start Num: 20
Candidate Starts for Gazebo_32:
(7, 22333), (Start: 20 @22390 has 46 MA's), (30, 22462), (35, 22549), (48, 22666), (54, 22681),

Gene: Grassboy_34 Start: 22564, Stop: 22977, Start Num: 20
Candidate Starts for Grassboy_34:
(7, 22507), (Start: 20 @22564 has 46 MA's), (35, 22723), (48, 22840), (54, 22855),

Gene: Grumio_53 Start: 29013, Stop: 29438, Start Num: 15
Candidate Starts for Grumio_53:
(Start: 15 @29013 has 7 MA's), (Start: 39 @29211 has 2 MA's), (47, 29283), (57, 29337), (59, 29352),

Gene: Hyperion_32 Start: 22347, Stop: 22760, Start Num: 20
Candidate Starts for Hyperion_32:
(7, 22290), (Start: 20 @22347 has 46 MA's), (35, 22506), (48, 22623), (54, 22638),

Gene: Jehoshaphat_35 Start: 22869, Stop: 23273, Start Num: 20
Candidate Starts for Jehoshaphat_35:
(7, 22812), (Start: 20 @22869 has 46 MA's), (22, 22905), (44, 23079), (46, 23100), (52, 23145), (54, 23154), (72, 23259), (73, 23268),

Gene: JohnLord_22 Start: 16002, Stop: 16328, Start Num: 29
Candidate Starts for JohnLord_22:
(11, 15924), (29, 16002), (Start: 33 @16047 has 1 MA's), (34, 16053), (41, 16119), (46, 16161), (47, 16185), (49, 16212), (65, 16302),

Gene: Jollymon_53 Start: 29535, Stop: 29960, Start Num: 15
Candidate Starts for Jollymon_53:
(Start: 15 @29535 has 7 MA's), (Start: 39 @29733 has 2 MA's), (47, 29805), (57, 29859), (59, 29874),

Gene: Judebell_35 Start: 22375, Stop: 22779, Start Num: 20
Candidate Starts for Judebell_35:
(Start: 20 @22375 has 46 MA's), (21, 22387), (44, 22585), (46, 22606), (52, 22651), (54, 22660), (72, 22765), (73, 22774),

Gene: Kelcole_31 Start: 20979, Stop: 21374, Start Num: 19

Candidate Starts for Kelcole_31:
(Start: 19 @20979 has 11 MA's), (Start: 23 @21021 has 1 MA's), (27, 21030), (35, 21138), (51, 21252), (57, 21279), (71, 21366),

Gene: KillerQueen_33 Start: 20774, Stop: 21169, Start Num: 19
Candidate Starts for KillerQueen_33:
(Start: 19 @20774 has 11 MA's), (27, 20825), (35, 20933), (46, 21008), (57, 21074), (71, 21161),

Gene: KingstonB_51 Start: 29013, Stop: 29438, Start Num: 15
Candidate Starts for KingstonB_51:
(Start: 15 @29013 has 7 MA's), (Start: 39 @29211 has 2 MA's), (47, 29283), (57, 29337), (59, 29352),

Gene: Kyva_35 Start: 22599, Stop: 23012, Start Num: 20
Candidate Starts for Kyva_35:
(7, 22542), (Start: 20 @22599 has 46 MA's), (35, 22758), (48, 22875), (54, 22890),

Gene: LilCahh_32 Start: 21966, Stop: 22364, Start Num: 20
Candidate Starts for LilCahh_32:
(8, 21912), (Start: 20 @21966 has 46 MA's), (22, 22002), (44, 22176), (46, 22197), (52, 22242), (54, 22251),

Gene: Llemily_32 Start: 21645, Stop: 22049, Start Num: 20
Candidate Starts for Llemily_32:
(7, 21588), (Start: 20 @21645 has 46 MA's), (22, 21681), (44, 21855), (46, 21876), (52, 21921), (54, 21930), (72, 22035), (73, 22044),

Gene: Lonelysoil_32 Start: 21890, Stop: 22294, Start Num: 20
Candidate Starts for Lonelysoil_32:
(7, 21833), (Start: 20 @21890 has 46 MA's), (22, 21926), (44, 22100), (46, 22121), (52, 22166), (54, 22175), (72, 22280), (73, 22289),

Gene: Makar_54 Start: 29466, Stop: 29900, Start Num: 15
Candidate Starts for Makar_54:
(Start: 15 @29466 has 7 MA's), (28, 29538), (30, 29553), (Start: 32 @29592 has 1 MA's), (Start: 39 @29664 has 2 MA's), (41, 29670), (46, 29712), (47, 29736), (48, 29760), (57, 29790), (59, 29805),

Gene: Marcie_37 Start: 21635, Stop: 22030, Start Num: 19
Candidate Starts for Marcie_37:
(Start: 19 @21635 has 11 MA's), (Start: 23 @21677 has 1 MA's), (43, 21845), (57, 21935), (71, 22022),

Gene: Mashley_31 Start: 22162, Stop: 22575, Start Num: 20
Candidate Starts for Mashley_31:
(7, 22105), (Start: 20 @22162 has 46 MA's), (30, 22234), (35, 22321), (48, 22438), (54, 22453),

Gene: Mentos_35 Start: 23249, Stop: 23662, Start Num: 20
Candidate Starts for Mentos_35:
(7, 23192), (Start: 20 @23249 has 46 MA's), (35, 23408), (48, 23525), (54, 23540),

Gene: Mila11_35 Start: 23134, Stop: 23547, Start Num: 20
Candidate Starts for Mila11_35:
(7, 23077), (Start: 20 @23134 has 46 MA's), (35, 23293), (48, 23410), (54, 23425),

Gene: MorillMayhem_33 Start: 22160, Stop: 22564, Start Num: 20

Candidate Starts for MorillMayhem_33:
(7, 22103), (Start: 20 @22160 has 46 MA's), (22, 22196), (44, 22370), (46, 22391), (52, 22436), (54, 22445), (72, 22550), (73, 22559),

Gene: Namago_33 Start: 21729, Stop: 22142, Start Num: 20
Candidate Starts for Namago_33:
(7, 21672), (Start: 20 @21729 has 46 MA's), (35, 21888), (48, 22005), (54, 22020),

Gene: Nike_33 Start: 22681, Stop: 23094, Start Num: 20
Candidate Starts for Nike_33:
(7, 22624), (Start: 20 @22681 has 46 MA's), (35, 22840), (48, 22957), (54, 22972),

Gene: OneinaGillian_32 Start: 20626, Stop: 21021, Start Num: 19
Candidate Starts for OneinaGillian_32:
(Start: 19 @20626 has 11 MA's), (27, 20677), (35, 20785), (46, 20860), (57, 20926), (71, 21013),

Gene: Pepe25_31 Start: 20844, Stop: 21239, Start Num: 19
Candidate Starts for Pepe25_31:
(Start: 19 @20844 has 11 MA's), (Start: 23 @20886 has 1 MA's), (27, 20895), (35, 21003), (57, 21144), (68, 21213), (71, 21231),

Gene: Phabia_33 Start: 22063, Stop: 22467, Start Num: 20
Candidate Starts for Phabia_33:
(7, 22006), (Start: 20 @22063 has 46 MA's), (22, 22099), (44, 22273), (46, 22294), (52, 22339), (54, 22348), (72, 22453), (73, 22462),

Gene: Phaedrus_24 Start: 19399, Stop: 19692, Start Num: 33
Candidate Starts for Phaedrus_24:
(14, 19279), (29, 19354), (Start: 33 @19399 has 1 MA's), (34, 19405), (47, 19537), (66, 19663),

Gene: Phinky_39 Start: 23231, Stop: 23650, Start Num: 20
Candidate Starts for Phinky_39:
(10, 23201), (Start: 20 @23231 has 46 MA's), (22, 23267), (24, 23276), (Start: 32 @23342 has 1 MA's), (46, 23465), (54, 23522), (73, 23645),

Gene: Purplicious_52 Start: 28781, Stop: 29206, Start Num: 15
Candidate Starts for Purplicious_52:
(Start: 15 @28781 has 7 MA's), (Start: 39 @28979 has 2 MA's), (47, 29051), (57, 29105), (59, 29120),

Gene: Quammi_31 Start: 21635, Stop: 22048, Start Num: 20
Candidate Starts for Quammi_31:
(7, 21578), (Start: 20 @21635 has 46 MA's), (22, 21671), (35, 21794), (48, 21911), (54, 21926),

Gene: RobinRose_34 Start: 21130, Stop: 21525, Start Num: 19
Candidate Starts for RobinRose_34:
(Start: 19 @21130 has 11 MA's), (Start: 23 @21172 has 1 MA's), (27, 21181), (35, 21289), (57, 21430), (71, 21517),

Gene: Romm_34 Start: 21130, Stop: 21525, Start Num: 19
Candidate Starts for Romm_34:
(Start: 19 @21130 has 11 MA's), (Start: 23 @21172 has 1 MA's), (27, 21181), (35, 21289), (57, 21430), (71, 21517),

Gene: Rowlf_29 Start: 21810, Stop: 22223, Start Num: 20
Candidate Starts for Rowlf_29:
(7, 21753), (Start: 20 @21810 has 46 MA's), (35, 21969), (48, 22086), (54, 22101),

Gene: RubyRalph_35 Start: 21703, Stop: 22119, Start Num: 20
Candidate Starts for RubyRalph_35:
(5, 21580), (10, 21670), (Start: 20 @21703 has 46 MA's), (Start: 32 @21814 has 1 MA's), (45, 21919), (56, 22000), (57, 22003), (74, 22114),

Gene: Rudy_31 Start: 21668, Stop: 22081, Start Num: 20
Candidate Starts for Rudy_31:
(7, 21611), (12, 21641), (Start: 20 @21668 has 46 MA's), (22, 21704), (35, 21827), (48, 21944), (54, 21959),

Gene: SadLad_37 Start: 22646, Stop: 23062, Start Num: 20
Candidate Starts for SadLad_37:
(1, 22172), (2, 22178), (3, 22205), (4, 22295), (5, 22523), (10, 22613), (Start: 20 @22646 has 46 MA's), (Start: 32 @22757 has 1 MA's), (56, 22943), (57, 22946), (74, 23057),

Gene: SallyK_34 Start: 22743, Stop: 23147, Start Num: 20
Candidate Starts for SallyK_34:
(Start: 20 @22743 has 46 MA's), (22, 22779), (44, 22953), (46, 22974), (52, 23019), (54, 23028), (72, 23133), (73, 23142),

Gene: Sillytadpoles_33 Start: 21633, Stop: 22037, Start Num: 20
Candidate Starts for Sillytadpoles_33:
(7, 21576), (Start: 20 @21633 has 46 MA's), (22, 21669), (44, 21843), (46, 21864), (52, 21909), (54, 21918), (72, 22023), (73, 22032),

Gene: SlySloth_35 Start: 22638, Stop: 23036, Start Num: 20
Candidate Starts for SlySloth_35:
(8, 22584), (Start: 20 @22638 has 46 MA's), (22, 22674), (44, 22848), (46, 22869), (52, 22914), (54, 22923),

Gene: Soos_49 Start: 28742, Stop: 29167, Start Num: 15
Candidate Starts for Soos_49:
(Start: 15 @28742 has 7 MA's), (Start: 39 @28940 has 2 MA's), (47, 29012), (57, 29066), (59, 29081),

Gene: Spiderpig_32 Start: 20827, Stop: 21222, Start Num: 19
Candidate Starts for Spiderpig_32:
(Start: 19 @20827 has 11 MA's), (Start: 23 @20869 has 1 MA's), (27, 20878), (35, 20986), (57, 21127), (68, 21196), (71, 21214),

Gene: Squash_35 Start: 22692, Stop: 23105, Start Num: 20
Candidate Starts for Squash_35:
(7, 22635), (Start: 20 @22692 has 46 MA's), (35, 22851), (48, 22968), (54, 22983),

Gene: StAugustine_29 Start: 21845, Stop: 22075, Start Num: 39
Candidate Starts for StAugustine_29:
(11, 21641), (13, 21650), (17, 21662), (22, 21701), (25, 21710), (Start: 39 @21845 has 2 MA's), (41, 21851), (63, 22019), (64, 22031), (72, 22070),

Gene: Statler_34 Start: 22552, Stop: 22956, Start Num: 20

Candidate Starts for Statler_34:
(9, 22507), (Start: 20 @22552 has 46 MA's), (21, 22564), (22, 22588), (44, 22762), (46, 22783), (52, 22828), (54, 22837), (72, 22942), (73, 22951),

Gene: Stillion_52 Start: 29339, Stop: 29764, Start Num: 15
Candidate Starts for Stillion_52:
(Start: 15 @29339 has 7 MA's), (Start: 39 @29537 has 2 MA's), (47, 29609), (57, 29663), (59, 29678),

Gene: Sting_52 Start: 29181, Stop: 29606, Start Num: 15
Candidate Starts for Sting_52:
(Start: 15 @29181 has 7 MA's), (Start: 39 @29379 has 2 MA's), (47, 29451), (57, 29505), (59, 29520),

Gene: StrawberryJamm_35 Start: 21872, Stop: 22285, Start Num: 20
Candidate Starts for StrawberryJamm_35:
(7, 21815), (Start: 20 @21872 has 46 MA's), (35, 22031), (48, 22148), (54, 22163),

Gene: Sunfish_41 Start: 23003, Stop: 23479, Start Num: 20
Candidate Starts for Sunfish_41:
(Start: 20 @23003 has 46 MA's), (31, 23084), (46, 23234), (52, 23288), (55, 23306), (60, 23333),

Gene: Teehee_34 Start: 22869, Stop: 23273, Start Num: 20
Candidate Starts for Teehee_34:
(7, 22812), (Start: 20 @22869 has 46 MA's), (22, 22905), (44, 23079), (46, 23100), (52, 23145), (54, 23154), (72, 23259), (73, 23268),

Gene: Tempo_32 Start: 21006, Stop: 21401, Start Num: 19
Candidate Starts for Tempo_32:
(Start: 19 @21006 has 11 MA's), (Start: 23 @21048 has 1 MA's), (27, 21057), (35, 21165), (53, 21288), (57, 21306), (71, 21393),

Gene: Tissue_33 Start: 22386, Stop: 22790, Start Num: 20
Candidate Starts for Tissue_33:
(Start: 20 @22386 has 46 MA's), (21, 22398), (44, 22596), (46, 22617), (52, 22662), (54, 22671), (72, 22776), (73, 22785),

Gene: Tonitrus_40 Start: 27403, Stop: 27783, Start Num: 23
Candidate Starts for Tonitrus_40:
(16, 27346), (Start: 23 @27403 has 1 MA's), (30, 27433), (34, 27484), (37, 27529), (38, 27532), (41, 27547), (42, 27559), (48, 27637), (57, 27667), (58, 27670), (61, 27691),

Gene: Viceroy_32 Start: 21635, Stop: 22048, Start Num: 20
Candidate Starts for Viceroy_32:
(7, 21578), (Start: 20 @21635 has 46 MA's), (22, 21671), (35, 21794), (48, 21911), (54, 21926),

Gene: Wayne3_34 Start: 22632, Stop: 23036, Start Num: 20
Candidate Starts for Wayne3_34:
(7, 22575), (Start: 20 @22632 has 46 MA's), (22, 22668), (44, 22842), (46, 22863), (52, 22908), (54, 22917), (72, 23022), (73, 23031),

Gene: WheelerS25_38 Start: 23392, Stop: 23796, Start Num: 20
Candidate Starts for WheelerS25_38:
(7, 23335), (Start: 20 @23392 has 46 MA's), (44, 23602), (46, 23623), (52, 23668), (54, 23677), (72, 23782), (73, 23791),

Gene: Wheelie_32 Start: 21950, Stop: 22354, Start Num: 20
Candidate Starts for Wheelie_32:
(7, 21893), (Start: 20 @21950 has 46 MA's), (22, 21986), (44, 22160), (46, 22181), (52, 22226), (54, 22235), (72, 22340), (73, 22349),

Gene: Wilca_32 Start: 20827, Stop: 21222, Start Num: 19
Candidate Starts for Wilca_32:
(Start: 19 @20827 has 11 MA's), (Start: 23 @20869 has 1 MA's), (27, 20878), (35, 20986), (57, 21127), (68, 21196), (71, 21214),

Gene: Zagie_33 Start: 22073, Stop: 22486, Start Num: 20
Candidate Starts for Zagie_33:
(7, 22016), (Start: 20 @22073 has 46 MA's), (35, 22232), (48, 22349), (54, 22364),

Gene: ZestyBestie_31 Start: 21905, Stop: 22309, Start Num: 20
Candidate Starts for ZestyBestie_31:
(Start: 20 @21905 has 46 MA's), (21, 21917), (44, 22115), (46, 22136), (52, 22181), (54, 22190), (72, 22295), (73, 22304),

Gene: Zhafia_35 Start: 22428, Stop: 22832, Start Num: 20
Candidate Starts for Zhafia_35:
(7, 22371), (Start: 20 @22428 has 46 MA's), (22, 22464), (44, 22638), (46, 22659), (52, 22704), (54, 22713), (72, 22818), (73, 22827),

Gene: phiAsp2_21 Start: 13673, Stop: 14086, Start Num: 18
Candidate Starts for phiAsp2_21:
(18, 13673), (26, 13724), (31, 13754), (34, 13796), (36, 13832), (40, 13856), (41, 13859), (42, 13871), (54, 13964), (59, 13994),