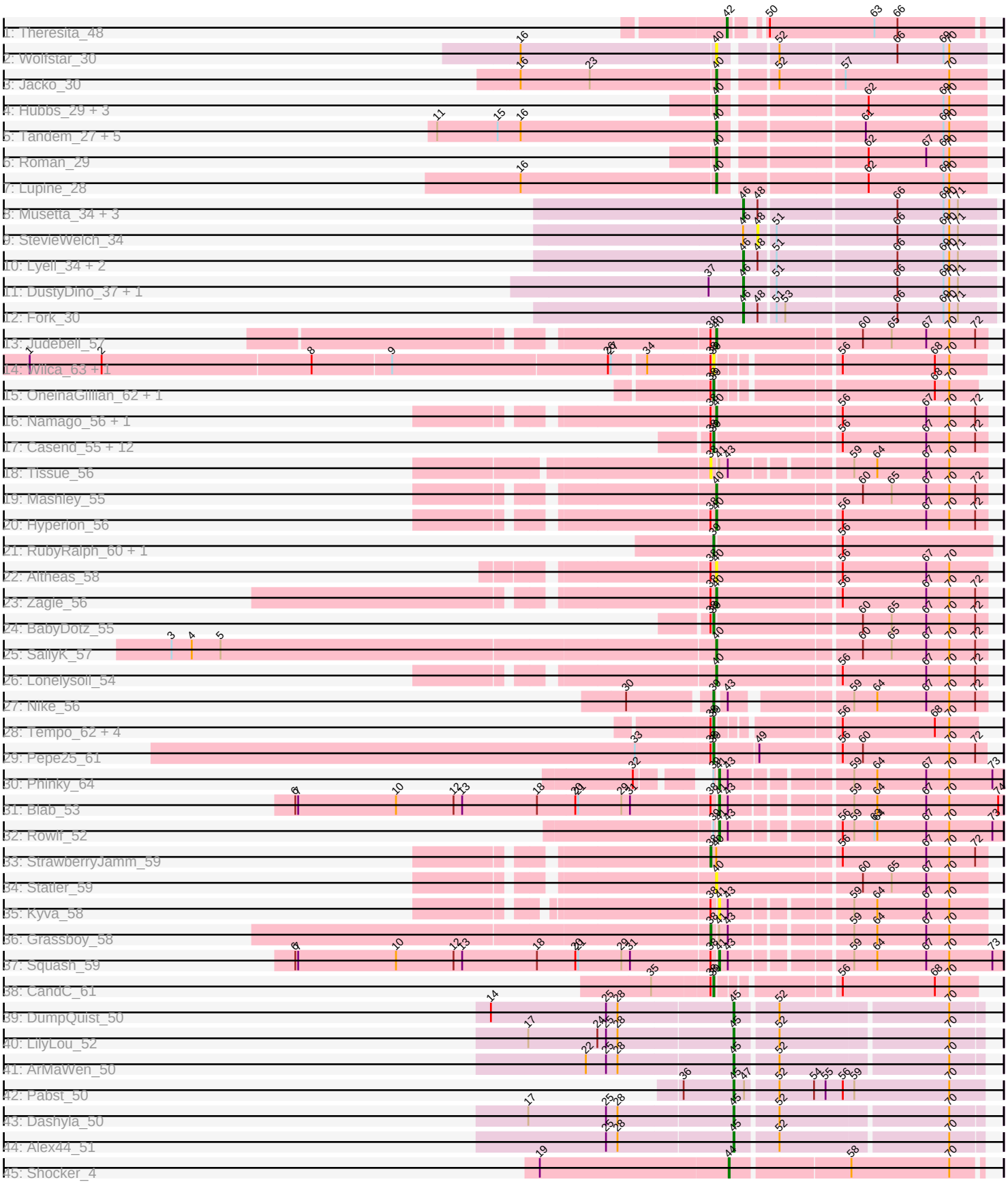
Pham 171399


1: Theresita_48
2: Wolfstar_30
3: Jacko_30
4: Hubbs_29 + 3
5: Tandem_27 + 5
6: Roman_29
7: Lupine_28
8: Musetta_34 + 3
9: StevieWelch_34
10: Lyell_34 + 2
11: DustyDino_37 + 1
12: Fork_30
13: Judebell_57
14: Wilca_63 + 1
15: OneInaGillian_62 + 1
16: Namago_56 + 1
17: Casend_55 + 12
18: Tissue_56
19: Mashley_55
20: Hyperion_56
21: RubyRalph_60 + 1
22: Altheas_58
23: Zagie_56
24: BabyDotz_55
25: SallyK_57
26: Lonelysoil_54
27: Nike_56
28: Tempo_62 + 4
29: Pepe25_61
30: Phinky_64
31: Blab_53
32: Rowlf_52
33: StrawberryJamm_59
34: Statler_59
35: Kyva_58
36: Grassboy_58
37: Squash_59
38: CandC_61
39: DumpQuist_50
40: LilyLou_52
41: ArMaWen_50
42: Pabst_50
43: Dashyla_50
44: Alex44_51
45: Shocker_4

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 171399 Report

This analysis was run 07/10/24 on database version 566.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 171399 has 79 members, 14 are drafts.

Phages represented in each track:
- Track 1 : Theresita_48
- Track 2 : Wolfstar_30
- Track 3 : Jacko_30
- Track 4 : Hubbs_29, PhillyPhilly_29, Pavlo_28, DejaVu_30
- Track 5 : Tandem_27, Platte_27, Alleb_28, Pioneer3_27, OlinDD_27, Hortus1_27
- Track 6 : Roman_29
- Track 7 : Lupine_28
- Track 8 : Musetta_34, Yuma_33, Welcome_35, ASegato_33
- Track 9 : StevieWelch_34
- Track 10 : Lyell_34, Necrophoxinus_36, Erenyeager_34
- Track 11 : DustyDino_37, RunningBrook_36
- Track 12 : Fork_30
- Track 13 : Judebell_57
- Track 14 : Wilca_63, BirdInFrench_63
- Track 15 : OneinaGillian_62, Marcie_67
- Track 16 : Namago_56, Gazebo_55
- Track 17 : Casend_55, Quammi_52, DonaldDuck_54, Wheelie_54, Viceroy_53, Rudy_52, Wayne3_56, Zhafia_57, Jehoshaphat_56, Llemily_54, Phabia_54, Sillytadpoles_55, Teehee_55
- Track 18 : Tissue_56
- Track 19 : Mashley_55
- Track 20 : Hyperion_56
- Track 21 : RubyRalph_60, Fransoyer_58
- Track 22 : Altheas_58
- Track 23 : Zagie_56
- Track 24 : BabyDotz_55
- Track 25 : SallyK_57
- Track 26 : Lonelysoil_54
- Track 27 : Nike_56
- Track 28 : Tempo_62, Romm_64, Kelcole_60, Fregley_62, RobinRose_64
- Track 29 : Pepe25_61
- Track 30 : Phinky_64
- Track 31 : Blab_53

• Track 32 : Rowlf_52
• Track 33 : StrawberryJamm_59
• Track 34 : Statler_59
• Track 35 : Kyva_58
• Track 36 : Grassboy_58
• Track 37 : Squash_59
• Track 38 : CandC_61
• Track 39 : DumpQuist_50
• Track 40 : LilyLou_52
• Track 41 : ArMaWen_50
• Track 42 : Pabst_50
• Track 43 : Dashyla_50
• Track 44 : Alex44_51
• Track 45 : Shocker_4

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

The start number called the most often in the published annotations is 39, it was called in 21 of the 65 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• BabyDotz_55, BirdInFrench_63, CandC_61, Casend_55, DonaldDuck_54, Fransoyer_58, Fregley_62, Jehoshaphat_56, Kelcole_60, Llemily_54, Marcie_67, Nike_56, OneinaGillian_62, Pepe25_61, Phabia_54, Quammi_52, RobinRose_64, Romm_64, RubyRalph_60, Rudy_52, Sillytadpoles_55, Teehee_55, Tempo_62, Viceroy_53, Wayne3_56, Wheelie_54, Wilca_63, Zhafia_57,

Genes that have the "Most Annotated" start but do not call it:
• Phinky_64, Rowlf_52,

Genes that do not have the "Most Annotated" start:
• ASegato_33, Alex44_51, Alleb_28, Altheas_58, ArMaWen_50, Blab_53, Dashyla_50, DejaVu_30, DumpQuist_50, DustyDino_37, Erenyeager_34, Fork_30, Gazebo_55, Grassboy_58, Hortus1_27, Hubbs_29, Hyperion_56, Jacko_30, Judebell_57, Kyva_58, LilyLou_52, Lonelysoil_54, Lupine_28, Lyell_34, Mashley_55, Musetta_34, Namago_56, Necrophoxinus_36, OlinDD_27, Pabst_50, Pavlo_28, PhillyPhilly_29, Pioneer3_27, Platte_27, Roman_29, RunningBrook_36, SallyK_57, Shocker_4, Squash_59, Statler_59, StevieWelch_34, StrawberryJamm_59, Tandem_27, Theresita_48, Tissue_56, Welcome_35, Wolfstar_30, Yuma_33, Zagie_56,

Summary by start number:

Start 38:
• Found in 37 of 79 (46.8%) of genes in pham
• Manual Annotations of this start: 2 of 65
• Called 8.1% of time when present
• Phage (with cluster) where this start called: Grassboy_58 (EG), StrawberryJamm_59 (EG), Tissue_56 (EG),

Start 39:
• Found in 30 of 79 (38.0%) of genes in pham
• Manual Annotations of this start: 21 of 65
• Called 93.3% of time when present
• Phage (with cluster) where this start called: BabyDotz_55 (EG), BirdInFrench_63 (EG), CandC_61 (EG), Casend_55 (EG), DonaldDuck_54 (EG), Fransoyer_58 (EG), Fregley_62 (EG), Jehoshaphat_56 (EG), Kelcole_60 (EG), Llemily_54 (EG), Marcie_67 (EG), Nike_56 (EG), OneinaGillian_62 (EG), Pepe25_61 (EG), Phabia_54 (EG), Quammi_52 (EG), RobinRose_64 (EG), Romm_64 (EG), RubyRalph_60 (EG), Rudy_52 (EG), Sillytadpoles_55 (EG), Teehee_55 (EG), Tempo_62 (EG), Viceroy_53 (EG), Wayne3_56 (EG), Wheelie_54 (EG), Wilca_63 (EG), Zhafia_57 (EG),

Start 40:
• Found in 25 of 79 (31.6%) of genes in pham
• Manual Annotations of this start: 21 of 65
• Called 96.0% of time when present
• Phage (with cluster) where this start called: Alleb_28 (ED1), Altheas_58 (EG), DejaVu_30 (ED1), Gazebo_55 (EG), Hortus1_27 (ED1), Hubbs_29 (ED1), Hyperion_56 (EG), Jacko_30 (ED1), Judebell_57 (EG), Lonelysoil_54 (EG), Lupine_28 (ED1), Mashley_55 (EG), Namago_56 (EG), OlinDD_27 (ED1), Pavlo_28 (ED1), PhillyPhilly_29 (ED1), Pioneer3_27 (ED1), Platte_27 (ED1), Roman_29 (ED1), SallyK_57 (EG), Statler_59 (EG), Tandem_27 (ED1), Wolfstar_30 (ED), Zagie_56 (EG),

Start 41:
• Found in 7 of 79 (8.9%) of genes in pham
• Manual Annotations of this start: 4 of 65
• Called 71.4% of time when present
• Phage (with cluster) where this start called: Blab_53 (EG), Kyva_58 (EG), Phinky_64 (EG), Rowlf_52 (EG), Squash_59 (EG),

Start 42:
• Found in 1 of 79 (1.3%) of genes in pham
• Manual Annotations of this start: 1 of 65
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Theresita_48 (EA7),

Start 44:
• Found in 1 of 79 (1.3%) of genes in pham
• Manual Annotations of this start: 1 of 65
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Shocker_4 (singleton),

Start 45:
• Found in 6 of 79 (7.6%) of genes in pham
• Manual Annotations of this start: 6 of 65
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alex44_51 (EK1), ArMaWen_50 (EK1), Dashyla_50 (EK1), DumpQuist_50 (EK1), LilyLou_52 (EK1), Pabst_50 (EK1),

Start 46:
• Found in 11 of 79 (13.9%) of genes in pham
• Manual Annotations of this start: 9 of 65

• Called 90.9% of time when present
• Phage (with cluster) where this start called: ASegato_33 (ED2), DustyDino_37 (ED2), Erenyeager_34 (ED2), Fork_30 (ED2), Lyell_34 (ED2), Musetta_34 (ED2), Necrophoxinus_36 (ED2), RunningBrook_36 (ED2), Welcome_35 (ED2), Yuma_33 (ED2),

Start 48:
• Found in 9 of 79 (11.4%) of genes in pham
• No Manual Annotations of this start.
• Called 11.1% of time when present
• Phage (with cluster) where this start called: StevieWelch_34 (ED2),

Summary by clusters:

There are 7 clusters represented in this pham: singleton, ED, EG, ED2, ED1, EA7, EK1,

Info for manual annotations of cluster EA7:
•Start number 42 was manually annotated 1 time for cluster EA7.

Info for manual annotations of cluster ED1:
•Start number 40 was manually annotated 13 times for cluster ED1.

Info for manual annotations of cluster ED2:
•Start number 46 was manually annotated 9 times for cluster ED2.

Info for manual annotations of cluster EG:
•Start number 38 was manually annotated 2 times for cluster EG.
•Start number 39 was manually annotated 21 times for cluster EG.
•Start number 40 was manually annotated 8 times for cluster EG.
•Start number 41 was manually annotated 4 times for cluster EG.

Info for manual annotations of cluster EK1:
•Start number 45 was manually annotated 6 times for cluster EK1.

Gene Information:

Gene: ASegato_33 Start: 9624, Stop: 9875, Start Num: 46
Candidate Starts for ASegato_33:
(Start: 46 @9624 has 9 MA's), (48, 9639), (66, 9774), (69, 9822), (70, 9828), (71, 9837),

Gene: Alex44_51 Start: 51379, Stop: 51618, Start Num: 45
Candidate Starts for Alex44_51:
(25, 51250), (28, 51262), (Start: 45 @51379 has 6 MA's), (52, 51418), (70, 51586),

Gene: Alleb_28 Start: 8830, Stop: 9090, Start Num: 40
Candidate Starts for Alleb_28:
(11, 8539), (15, 8602), (16, 8626), (Start: 40 @8830 has 21 MA's), (61, 8965), (69, 9046), (70, 9052),

Gene: Altheas_58 Start: 42617, Stop: 42345, Start Num: 40

Candidate Starts for Altheas_58:
(Start: 38 @42623 has 2 MA's), (Start: 40 @42617 has 21 MA's), (56, 42494), (67, 42407), (70, 42383),

Gene: ArMaWen_50 Start: 50919, Stop: 51158, Start Num: 45
Candidate Starts for ArMaWen_50:
(22, 50769), (25, 50790), (28, 50802), (Start: 45 @50919 has 6 MA's), (52, 50958), (70, 51126),

Gene: BabyDotz_55 Start: 42840, Stop: 42568, Start Num: 39
Candidate Starts for BabyDotz_55:
(Start: 38 @42843 has 2 MA's), (Start: 39 @42840 has 21 MA's), (60, 42696), (65, 42666), (67, 42630), (70, 42606), (72, 42579),

Gene: BirdInFrench_63 Start: 42918, Stop: 42661, Start Num: 39
Candidate Starts for BirdInFrench_63:
(1, 43611), (2, 43536), (8, 43320), (9, 43239), (26, 43017), (27, 43014), (34, 42984), (Start: 38 @42921 has 2 MA's), (Start: 39 @42918 has 21 MA's), (56, 42810), (68, 42714), (70, 42699),

Gene: Blab_53 Start: 41667, Stop: 41395, Start Num: 41
Candidate Starts for Blab_53:
(6, 42102), (7, 42099), (10, 41997), (12, 41937), (13, 41928), (18, 41850), (20, 41811), (21, 41808), (29, 41763), (31, 41754), (Start: 38 @41673 has 2 MA's), (Start: 41 @41667 has 4 MA's), (43, 41658), (59, 41550), (64, 41526), (67, 41475), (70, 41451), (74, 41400),

Gene: CandC_61 Start: 42136, Stop: 41888, Start Num: 39
Candidate Starts for CandC_61:
(35, 42196), (Start: 38 @42139 has 2 MA's), (Start: 39 @42136 has 21 MA's), (56, 42028), (68, 41932), (70, 41917),

Gene: Casend_55 Start: 42251, Stop: 41979, Start Num: 39
Candidate Starts for Casend_55:
(Start: 38 @42254 has 2 MA's), (Start: 39 @42251 has 21 MA's), (56, 42128), (67, 42041), (70, 42017), (72, 41990),

Gene: Dashyla_50 Start: 51053, Stop: 51292, Start Num: 45
Candidate Starts for Dashyla_50:
(17, 50843), (25, 50924), (28, 50936), (Start: 45 @51053 has 6 MA's), (52, 51092), (70, 51260),

Gene: DejaVu_30 Start: 9028, Stop: 9288, Start Num: 40
Candidate Starts for DejaVu_30:
(Start: 40 @9028 has 21 MA's), (62, 9166), (69, 9244), (70, 9250),

Gene: DonaldDuck_54 Start: 41600, Stop: 41328, Start Num: 39
Candidate Starts for DonaldDuck_54:
(Start: 38 @41603 has 2 MA's), (Start: 39 @41600 has 21 MA's), (56, 41477), (67, 41390), (70, 41366), (72, 41339),

Gene: DumpQuist_50 Start: 50907, Stop: 51146, Start Num: 45
Candidate Starts for DumpQuist_50:
(14, 50658), (25, 50778), (28, 50790), (Start: 45 @50907 has 6 MA's), (52, 50946), (70, 51114),

Gene: DustyDino_37 Start: 10571, Stop: 10822, Start Num: 46
Candidate Starts for DustyDino_37:

(37, 10535), (Start: 46 @10571 has 9 MA's), (51, 10601), (66, 10721), (69, 10769), (70, 10775), (71, 10784),

Gene: Erenyeager_34 Start: 9965, Stop: 10216, Start Num: 46
Candidate Starts for Erenyeager_34:
(Start: 46 @9965 has 9 MA's), (48, 9980), (51, 9995), (66, 10115), (69, 10163), (70, 10169), (71, 10178),

Gene: Fork_30 Start: 9281, Stop: 9532, Start Num: 46
Candidate Starts for Fork_30:
(Start: 46 @9281 has 9 MA's), (48, 9296), (51, 9311), (53, 9320), (66, 9431), (69, 9479), (70, 9485), (71, 9494),

Gene: Fransoyer_58 Start: 44153, Stop: 43872, Start Num: 39
Candidate Starts for Fransoyer_58:
(Start: 39 @44153 has 21 MA's), (56, 44027),

Gene: Fregley_62 Start: 42305, Stop: 42057, Start Num: 39
Candidate Starts for Fregley_62:
(Start: 38 @42308 has 2 MA's), (Start: 39 @42305 has 21 MA's), (56, 42197), (68, 42101), (70, 42086),

Gene: Gazebo_55 Start: 42275, Stop: 42003, Start Num: 40
Candidate Starts for Gazebo_55:
(Start: 38 @42281 has 2 MA's), (Start: 40 @42275 has 21 MA's), (56, 42152), (67, 42065), (70, 42041), (72, 42014),

Gene: Grassboy_58 Start: 42646, Stop: 42386, Start Num: 38
Candidate Starts for Grassboy_58:
(Start: 38 @42646 has 2 MA's), (Start: 41 @42640 has 4 MA's), (43, 42631), (59, 42523), (64, 42499), (67, 42448), (70, 42424),

Gene: Hortus1_27 Start: 8829, Stop: 9089, Start Num: 40
Candidate Starts for Hortus1_27:
(11, 8538), (15, 8601), (16, 8625), (Start: 40 @8829 has 21 MA's), (61, 8964), (69, 9045), (70, 9051),

Gene: Hubbs_29 Start: 9240, Stop: 9500, Start Num: 40
Candidate Starts for Hubbs_29:
(Start: 40 @9240 has 21 MA's), (62, 9378), (69, 9456), (70, 9462),

Gene: Hyperion_56 Start: 42456, Stop: 42184, Start Num: 40
Candidate Starts for Hyperion_56:
(Start: 38 @42459 has 2 MA's), (Start: 40 @42456 has 21 MA's), (56, 42333), (67, 42246), (70, 42222), (72, 42195),

Gene: Jacko_30 Start: 9333, Stop: 9593, Start Num: 40
Candidate Starts for Jacko_30:
(16, 9132), (23, 9204), (Start: 40 @9333 has 21 MA's), (52, 9384), (57, 9447), (70, 9555),

Gene: Jehoshaphat_56 Start: 42519, Stop: 42247, Start Num: 39
Candidate Starts for Jehoshaphat_56:
(Start: 38 @42522 has 2 MA's), (Start: 39 @42519 has 21 MA's), (56, 42396), (67, 42309), (70, 42285), (72, 42258),

Gene: Judebell_57 Start: 42165, Stop: 41893, Start Num: 40
Candidate Starts for Judebell_57:
(Start: 38 @42168 has 2 MA's), (Start: 40 @42165 has 21 MA's), (60, 42021), (65, 41991), (67, 41955), (70, 41931), (72, 41904),

Gene: Kelcole_60 Start: 42364, Stop: 42116, Start Num: 39
Candidate Starts for Kelcole_60:
(Start: 38 @42367 has 2 MA's), (Start: 39 @42364 has 21 MA's), (56, 42256), (68, 42160), (70, 42145),

Gene: Kyva_58 Start: 42697, Stop: 42443, Start Num: 41
Candidate Starts for Kyva_58:
(Start: 38 @42703 has 2 MA's), (Start: 41 @42697 has 4 MA's), (43, 42688), (59, 42580), (64, 42556), (67, 42505), (70, 42481),

Gene: LilyLou_52 Start: 51371, Stop: 51610, Start Num: 45
Candidate Starts for LilyLou_52:
(17, 51161), (24, 51233), (25, 51242), (28, 51254), (Start: 45 @51371 has 6 MA's), (52, 51410), (70, 51578),

Gene: Llemily_54 Start: 41295, Stop: 41023, Start Num: 39
Candidate Starts for Llemily_54:
(Start: 38 @41298 has 2 MA's), (Start: 39 @41295 has 21 MA's), (56, 41172), (67, 41085), (70, 41061), (72, 41034),

Gene: Lonelysoil_54 Start: 41648, Stop: 41376, Start Num: 40
Candidate Starts for Lonelysoil_54:
(Start: 40 @41648 has 21 MA's), (56, 41525), (67, 41438), (70, 41414), (72, 41387),

Gene: Lupine_28 Start: 8912, Stop: 9172, Start Num: 40
Candidate Starts for Lupine_28:
(16, 8711), (Start: 40 @8912 has 21 MA's), (62, 9050), (69, 9128), (70, 9134),

Gene: Lyell_34 Start: 9883, Stop: 10134, Start Num: 46
Candidate Starts for Lyell_34:
(Start: 46 @9883 has 9 MA's), (48, 9898), (51, 9913), (66, 10033), (69, 10081), (70, 10087), (71, 10096),

Gene: Marcie_67 Start: 43263, Stop: 43015, Start Num: 39
Candidate Starts for Marcie_67:
(Start: 38 @43266 has 2 MA's), (Start: 39 @43263 has 21 MA's), (68, 43059), (70, 43044),

Gene: Mashley_55 Start: 42232, Stop: 41960, Start Num: 40
Candidate Starts for Mashley_55:
(Start: 40 @42232 has 21 MA's), (60, 42088), (65, 42058), (67, 42022), (70, 41998), (72, 41971),

Gene: Musetta_34 Start: 9992, Stop: 10243, Start Num: 46
Candidate Starts for Musetta_34:
(Start: 46 @9992 has 9 MA's), (48, 10007), (66, 10142), (69, 10190), (70, 10196), (71, 10205),

Gene: Namago_56 Start: 41635, Stop: 41363, Start Num: 40
Candidate Starts for Namago_56:

(Start: 38 @41641 has 2 MA's), (Start: 40 @41635 has 21 MA's), (56, 41512), (67, 41425), (70, 41401), (72, 41374),

Gene: Necrophoxinus_36 Start: 10579, Stop: 10830, Start Num: 46
Candidate Starts for Necrophoxinus_36:
(Start: 46 @10579 has 9 MA's), (48, 10594), (51, 10609), (66, 10729), (69, 10777), (70, 10783), (71, 10792),

Gene: Nike_56 Start: 42603, Stop: 42349, Start Num: 39
Candidate Starts for Nike_56:
(30, 42684), (Start: 39 @42603 has 21 MA's), (43, 42594), (59, 42486), (64, 42462), (67, 42411), (70, 42387), (72, 42360),

Gene: OlinDD_27 Start: 8828, Stop: 9088, Start Num: 40
Candidate Starts for OlinDD_27:
(11, 8537), (15, 8600), (16, 8624), (Start: 40 @8828 has 21 MA's), (61, 8963), (69, 9044), (70, 9050),

Gene: OneinaGillian_62 Start: 42266, Stop: 42018, Start Num: 39
Candidate Starts for OneinaGillian_62:
(Start: 38 @42269 has 2 MA's), (Start: 39 @42266 has 21 MA's), (68, 42062), (70, 42047),

Gene: Pabst_50 Start: 50450, Stop: 50701, Start Num: 45
Candidate Starts for Pabst_50:
(36, 50399), (Start: 45 @50450 has 6 MA's), (47, 50459), (52, 50489), (54, 50525), (55, 50537), (56, 50555), (59, 50567), (70, 50666),

Gene: Pavlo_28 Start: 9187, Stop: 9447, Start Num: 40
Candidate Starts for Pavlo_28:
(Start: 40 @9187 has 21 MA's), (62, 9325), (69, 9403), (70, 9409),

Gene: Pepe25_61 Start: 41821, Stop: 41549, Start Num: 39
Candidate Starts for Pepe25_61:
(33, 41899), (Start: 38 @41824 has 2 MA's), (Start: 39 @41821 has 21 MA's), (49, 41779), (56, 41698), (60, 41677), (70, 41587), (72, 41560),

Gene: Phabia_54 Start: 41710, Stop: 41438, Start Num: 39
Candidate Starts for Phabia_54:
(Start: 38 @41713 has 2 MA's), (Start: 39 @41710 has 21 MA's), (56, 41587), (67, 41500), (70, 41476), (72, 41449),

Gene: PhillyPhilly_29 Start: 9092, Stop: 9352, Start Num: 40
Candidate Starts for PhillyPhilly_29:
(Start: 40 @9092 has 21 MA's), (62, 9230), (69, 9308), (70, 9314),

Gene: Phinky_64 Start: 44342, Stop: 44070, Start Num: 41
Candidate Starts for Phinky_64:
(32, 44396), (Start: 39 @44345 has 21 MA's), (Start: 41 @44342 has 4 MA's), (43, 44333), (59, 44225), (64, 44201), (67, 44150), (70, 44126), (73, 44081),

Gene: Pioneer3_27 Start: 8827, Stop: 9087, Start Num: 40
Candidate Starts for Pioneer3_27:
(11, 8536), (15, 8599), (16, 8623), (Start: 40 @8827 has 21 MA's), (61, 8962), (69, 9043), (70, 9049),

Gene: Platte_27 Start: 8597, Stop: 8857, Start Num: 40
Candidate Starts for Platte_27:
(11, 8306), (15, 8369), (16, 8393), (Start: 40 @8597 has 21 MA's), (61, 8732), (69, 8813), (70, 8819),

Gene: Quammi_52 Start: 41410, Stop: 41138, Start Num: 39
Candidate Starts for Quammi_52:
(Start: 38 @41413 has 2 MA's), (Start: 39 @41410 has 21 MA's), (56, 41287), (67, 41200), (70, 41176), (72, 41149),

Gene: RobinRose_64 Start: 42778, Stop: 42530, Start Num: 39
Candidate Starts for RobinRose_64:
(Start: 38 @42781 has 2 MA's), (Start: 39 @42778 has 21 MA's), (56, 42670), (68, 42574), (70, 42559),

Gene: Roman_29 Start: 9087, Stop: 9347, Start Num: 40
Candidate Starts for Roman_29:
(Start: 40 @9087 has 21 MA's), (62, 9225), (67, 9285), (69, 9303), (70, 9309),

Gene: Romm_64 Start: 42775, Stop: 42527, Start Num: 39
Candidate Starts for Romm_64:
(Start: 38 @42778 has 2 MA's), (Start: 39 @42775 has 21 MA's), (56, 42667), (68, 42571), (70, 42556),

Gene: Rowlf_52 Start: 41508, Stop: 41236, Start Num: 41
Candidate Starts for Rowlf_52:
(Start: 39 @41511 has 21 MA's), (Start: 41 @41508 has 4 MA's), (43, 41499), (56, 41403), (59, 41391), (63, 41370), (64, 41367), (67, 41316), (70, 41292), (73, 41247),

Gene: RubyRalph_60 Start: 44491, Stop: 44210, Start Num: 39
Candidate Starts for RubyRalph_60:
(Start: 39 @44491 has 21 MA's), (56, 44365),

Gene: Rudy_52 Start: 41446, Stop: 41174, Start Num: 39
Candidate Starts for Rudy_52:
(Start: 38 @41449 has 2 MA's), (Start: 39 @41446 has 21 MA's), (56, 41323), (67, 41236), (70, 41212), (72, 41185),

Gene: RunningBrook_36 Start: 10571, Stop: 10822, Start Num: 46
Candidate Starts for RunningBrook_36:
(37, 10535), (Start: 46 @10571 has 9 MA's), (51, 10601), (66, 10721), (69, 10769), (70, 10775), (71, 10784),

Gene: SallyK_57 Start: 42760, Stop: 42488, Start Num: 40
Candidate Starts for SallyK_57:
(3, 43315), (4, 43294), (5, 43264), (Start: 40 @42760 has 21 MA's), (60, 42616), (65, 42586), (67, 42550), (70, 42526), (72, 42499),

Gene: Shocker_4 Start: 1170, Stop: 1418, Start Num: 44
Candidate Starts for Shocker_4:
(19, 975), (Start: 44 @1170 has 1 MA's), (58, 1287), (70, 1389),

Gene: Sillytadpoles_55 Start: 41283, Stop: 41011, Start Num: 39
Candidate Starts for Sillytadpoles_55:

(Start: 38 @41286 has 2 MA's), (Start: 39 @41283 has 21 MA's), (56, 41160), (67, 41073), (70, 41049), (72, 41022),

Gene: Squash_59 Start: 42626, Stop: 42354, Start Num: 41
Candidate Starts for Squash_59:
(6, 43061), (7, 43058), (10, 42956), (12, 42896), (13, 42887), (18, 42809), (20, 42770), (21, 42767), (29, 42722), (31, 42713), (Start: 38 @42632 has 2 MA's), (Start: 41 @42626 has 4 MA's), (43, 42617), (59, 42509), (64, 42485), (67, 42434), (70, 42410), (73, 42365),

Gene: Statler_59 Start: 42227, Stop: 41955, Start Num: 40
Candidate Starts for Statler_59:
(Start: 40 @42227 has 21 MA's), (60, 42083), (65, 42053), (67, 42017), (70, 41993),

Gene: StevieWelch_34 Start: 9986, Stop: 10222, Start Num: 48
Candidate Starts for StevieWelch_34:
(Start: 46 @9971 has 9 MA's), (48, 9986), (51, 10001), (66, 10121), (69, 10169), (70, 10175), (71, 10184),

Gene: StrawberryJamm_59 Start: 41944, Stop: 41666, Start Num: 38
Candidate Starts for StrawberryJamm_59:
(Start: 38 @41944 has 2 MA's), (Start: 40 @41938 has 21 MA's), (56, 41815), (67, 41728), (70, 41704), (72, 41677),

Gene: Tandem_27 Start: 8766, Stop: 9026, Start Num: 40
Candidate Starts for Tandem_27:
(11, 8475), (15, 8538), (16, 8562), (Start: 40 @8766 has 21 MA's), (61, 8901), (69, 8982), (70, 8988),

Gene: Teehee_55 Start: 42516, Stop: 42244, Start Num: 39
Candidate Starts for Teehee_55:
(Start: 38 @42519 has 2 MA's), (Start: 39 @42516 has 21 MA's), (56, 42393), (67, 42306), (70, 42282), (72, 42255),

Gene: Tempo_62 Start: 42643, Stop: 42395, Start Num: 39
Candidate Starts for Tempo_62:
(Start: 38 @42646 has 2 MA's), (Start: 39 @42643 has 21 MA's), (56, 42535), (68, 42439), (70, 42424),

Gene: Theresita_48 Start: 29943, Stop: 30182, Start Num: 42
Candidate Starts for Theresita_48:
(Start: 42 @29943 has 1 MA's), (50, 29967), (63, 30075), (66, 30099),

Gene: Tissue_56 Start: 42542, Stop: 42282, Start Num: 38
Candidate Starts for Tissue_56:
(Start: 38 @42542 has 2 MA's), (Start: 41 @42536 has 4 MA's), (43, 42527), (59, 42419), (64, 42395), (67, 42344), (70, 42320),

Gene: Viceroy_53 Start: 41416, Stop: 41144, Start Num: 39
Candidate Starts for Viceroy_53:
(Start: 38 @41419 has 2 MA's), (Start: 39 @41416 has 21 MA's), (56, 41293), (67, 41206), (70, 41182), (72, 41155),

Gene: Wayne3_56 Start: 42279, Stop: 42007, Start Num: 39
Candidate Starts for Wayne3_56:

(Start: 38 @42282 has 2 MA's), (Start: 39 @42279 has 21 MA's), (56, 42156), (67, 42069), (70, 42045), (72, 42018),

Gene: Welcome_35 Start: 9988, Stop: 10239, Start Num: 46
Candidate Starts for Welcome_35:
(Start: 46 @9988 has 9 MA's), (48, 10003), (66, 10138), (69, 10186), (70, 10192), (71, 10201),

Gene: Wheelie_54 Start: 41600, Stop: 41328, Start Num: 39
Candidate Starts for Wheelie_54:
(Start: 38 @41603 has 2 MA's), (Start: 39 @41600 has 21 MA's), (56, 41477), (67, 41390), (70, 41366), (72, 41339),

Gene: Wilca_63 Start: 42918, Stop: 42661, Start Num: 39
Candidate Starts for Wilca_63:
(1, 43611), (2, 43536), (8, 43320), (9, 43239), (26, 43017), (27, 43014), (34, 42984), (Start: 38 @42921 has 2 MA's), (Start: 39 @42918 has 21 MA's), (56, 42810), (68, 42714), (70, 42699),

Gene: Wolfstar_30 Start: 9600, Stop: 9860, Start Num: 40
Candidate Starts for Wolfstar_30:
(16, 9399), (Start: 40 @9600 has 21 MA's), (52, 9651), (66, 9768), (69, 9816), (70, 9822),

Gene: Yuma_33 Start: 9891, Stop: 10142, Start Num: 46
Candidate Starts for Yuma_33:
(Start: 46 @9891 has 9 MA's), (48, 9906), (66, 10041), (69, 10089), (70, 10095), (71, 10104),

Gene: Zagie_56 Start: 42135, Stop: 41863, Start Num: 40
Candidate Starts for Zagie_56:
(Start: 38 @42141 has 2 MA's), (Start: 40 @42135 has 21 MA's), (56, 42012), (67, 41925), (70, 41901), (72, 41874),

Gene: Zhafia_57 Start: 42080, Stop: 41808, Start Num: 39
Candidate Starts for Zhafia_57:
(Start: 38 @42083 has 2 MA's), (Start: 39 @42080 has 21 MA's), (56, 41957), (67, 41870), (70, 41846), (72, 41819),