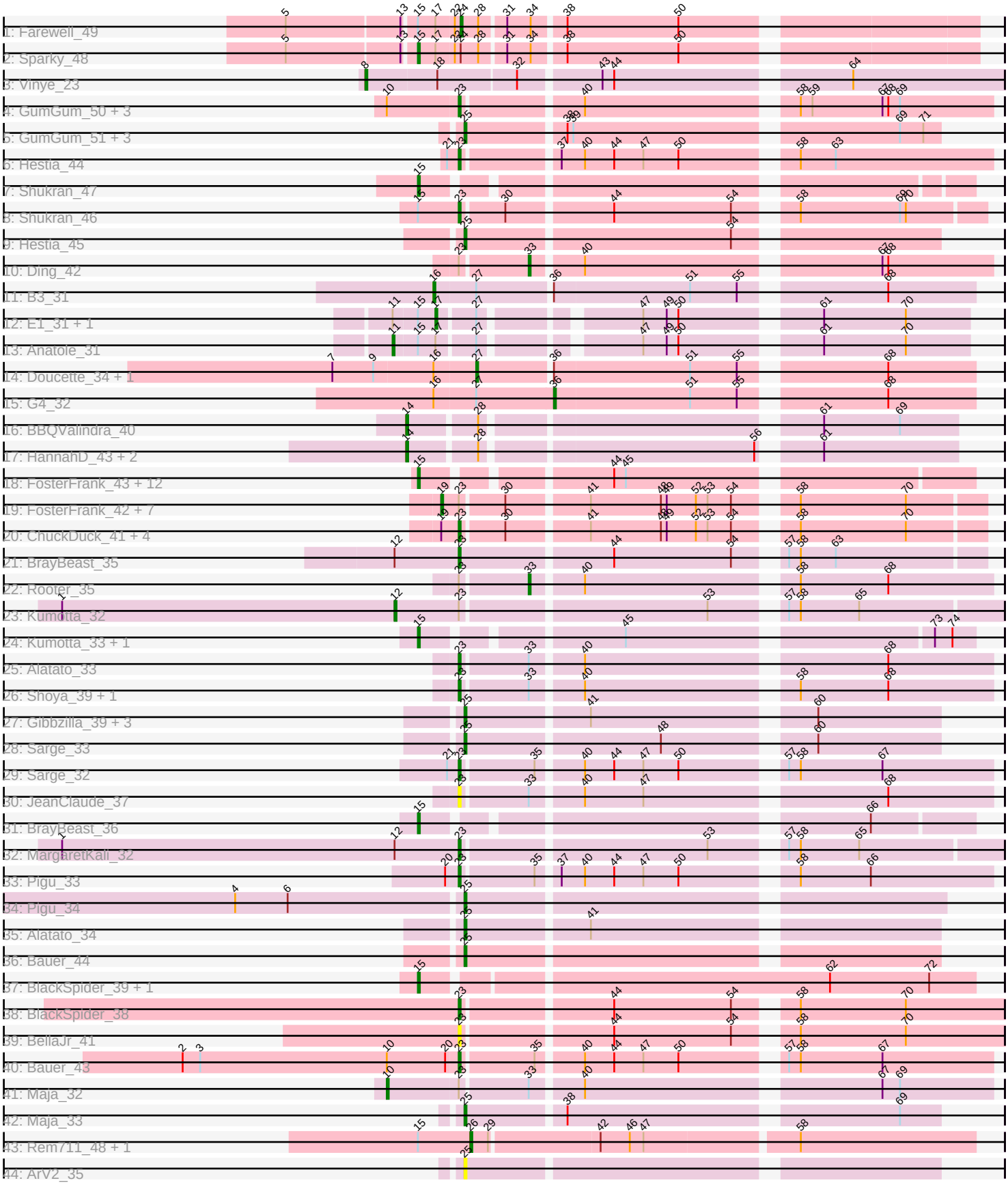
Pham 347513


1: Farewell_49
2: Sparky_48
3: Vinye_23
4: GumGum_50 + 3
5: GumGum_51 + 3
6: Hestia_44
7: Shukran_47
8: Shukran_46
9: Hestia_45
10: Ding_42
11: B3_31
12: E1_31 + 1
13: Anatole_31
14: Doucette_34 + 1
15: G4_32
16: BBQValindra_40
17: HannahD_43 + 2
18: FosterFrank_43 + 12
19: FosterFrank_42 + 7
20: ChuckDuck_41 + 4
21: BrayBeast_35
22: Rooter_35
23: Kumotta_32
24: Kumotta_33 + 1
25: Alatato_33
26: Shoya_39 + 1
27: Gibbzilla_39 + 3
28: Sarge_33
29: Sarge_32
30: JeanClaude_37
31: BrayBeast_36
32: MargaretKali_32
33: Pigu_33
34: Pigu_34
35: Alatato_34
36: Bauer_44
37: BlackSpider_39 + 1
38: BlackSpider_38
39: BellaJr_41
40: Bauer_43
41: Maja_32
42: Maja_33
43: Rem711_48 + 1
44: ArV2_35

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 347513 Report

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

Pham number 347513 has 84 members, 19 are drafts.

Phages represented in each track:
- Track 1 : Farewell_49
- Track 2 : Sparky_48
- Track 3 : Vinye_23
- Track 4 : GumGum_50, CosmicBrownie_47, Zucker_42, Nyilah_50
- Track 5 : GumGum_51, CosmicBrownie_48, Zucker_43, Nyilah_51
- Track 6 : Hestia_44
- Track 7 : Shukran_47
- Track 8 : Shukran_46
- Track 9 : Hestia_45
- Track 10 : Ding_42
- Track 11 : B3_31
- Track 12 : E1_31, E6_31
- Track 13 : Anatole_31
- Track 14 : Doucette_34, B22_32
- Track 15 : G4_32
- Track 16 : BBQValindra_40
- Track 17 : HannahD_43, GEazy_45, NaLuna_42
- Track 18 : FosterFrank_43, Judy_42, Peas_38, Bridgette_41, Eileen_37, LittleRon_39, ChuckDuck_42, Constance_41, RootBeer_32, KayMoney_41, NidoQ_36, GlobiWarming_41, LilyBell_41
- Track 19 : FosterFrank_42, Bridgette_40, Peas_37, LittleRon_38, Judy_41, Eileen_36, NidoQ_35, LilyBell_40
- Track 20 : ChuckDuck_41, Constance_40, RootBeer_31, KayMoney_40, GlobiWarming_40
- Track 21 : BrayBeast_35
- Track 22 : Rooter_35
- Track 23 : Kumotta_32
- Track 24 : Kumotta_33, MargaretKali_33
- Track 25 : Alatato_33
- Track 26 : Shoya_39, Gibbzilla_38
- Track 27 : Gibbzilla_39, JeanClaude_38, Shoya_40, Rooter_36
- Track 28 : Sarge_33
- Track 29 : Sarge_32
- Track 30 : JeanClaude_37
- Track 31 : BrayBeast_36
- Track 32 : MargaretKali_32
- Track 33 : Pigu_33

• Track 34 : Pigu_34
• Track 35 : Alatato_34
• Track 36 : Bauer_44
• Track 37 : BlackSpider_39, BellaJr_42
• Track 38 : BlackSpider_38
• Track 39 : BellaJr_41
• Track 40 : Bauer_43
• Track 41 : Maja_32
• Track 42 : Maja_33
• Track 43 : Rem711_48, 32HC_49
• Track 44 : ArV2_35

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

The start number called the most often in the published annotations is 23, it was called in 17 of the 65 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Alatato_33, Bauer_43, BellaJr_41, BlackSpider_38, BrayBeast_35, ChuckDuck_41, Constance_40, CosmicBrownie_47, Gibbzilla_38, GlobiWarming_40, GumGum_50, Hestia_44, JeanClaude_37, KayMoney_40, MargaretKali_32, Nyilah_50, Pigu_33, RootBeer_31, Sarge_32, Shoya_39, Shukran_46, Zucker_42,

Genes that have the "Most Annotated" start but do not call it:
• Bridgette_40, Ding_42, Eileen_36, FosterFrank_42, Judy_41, Kumotta_32, LilyBell_40, LittleRon_38, Maja_32, NidoQ_35, Peas_37, Rooter_35,

Genes that do not have the "Most Annotated" start:
• 32HC_49, Alatato_34, Anatole_31, ArV2_35, B22_32, B3_31, BBQValindra_40, Bauer_44, BellaJr_42, BlackSpider_39, BrayBeast_36, Bridgette_41, ChuckDuck_42, Constance_41, CosmicBrownie_48, Doucette_34, E1_31, E6_31, Eileen_37, Farewell_49, FosterFrank_43, G4_32, GEazy_45, Gibbzilla_39, GlobiWarming_41, GumGum_51, HannahD_43, Hestia_45, JeanClaude_38, Judy_42, KayMoney_41, Kumotta_33, LilyBell_41, LittleRon_39, Maja_33, MargaretKali_33, NaLuna_42, NidoQ_36, Nyilah_51, Peas_38, Pigu_34, Rem711_48, RootBeer_32, Rooter_36, Sarge_33, Shoya_40, Shukran_47, Sparky_48, Vinye_23, Zucker_43,

Summary by start number:

Start 8:
• Found in 1 of 84 (1.2%) 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: Vinye_23 (AN),

Start 10:
• Found in 6 of 84 (7.1%) of genes in pham
• Manual Annotations of this start: 1 of 65
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Maja_32 (FO),

Start 11:
• Found in 3 of 84 (3.6%) of genes in pham
• Manual Annotations of this start: 1 of 65
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Anatole_31 (BV),

Start 12:
• Found in 3 of 84 (3.6%) of genes in pham
• Manual Annotations of this start: 1 of 65
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Kumotta_32 (FB),

Start 14:
• Found in 4 of 84 (4.8%) of genes in pham
• Manual Annotations of this start: 3 of 65
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BBQValindra_40 (DB), GEazy_45 (DB), HannahD_43 (DB), NaLuna_42 (DB),

Start 15:
• Found in 27 of 84 (32.1%) of genes in pham
• Manual Annotations of this start: 16 of 65
• Called 74.1% of time when present
• Phage (with cluster) where this start called: BellaJr_42 (FN), BlackSpider_39 (FN), BrayBeast_36 (FB), Bridgette_41 (FA), ChuckDuck_42 (FA), Constance_41 (FA), Eileen_37 (FA), FosterFrank_43 (FA), GlobiWarming_41 (FA), Judy_42 (FA), KayMoney_41 (FA), Kumotta_33 (FB), LilyBell_41 (FA), LittleRon_39 (FA), MargaretKali_33 (FB), NidoQ_36 (FA), Peas_38 (FA), RootBeer_32 (FA), Shukran_47 (AY), Sparky_48 (AF),

Start 16:
• Found in 4 of 84 (4.8%) of genes in pham
• Manual Annotations of this start: 1 of 65
• Called 25.0% of time when present
• Phage (with cluster) where this start called: B3_31 (BV),

Start 17:
• Found in 5 of 84 (6.0%) of genes in pham
• Manual Annotations of this start: 2 of 65
• Called 40.0% of time when present
• Phage (with cluster) where this start called: E1_31 (BV), E6_31 (BW),

Start 19:
• Found in 13 of 84 (15.5%) of genes in pham
• Manual Annotations of this start: 5 of 65
• Called 61.5% of time when present
• Phage (with cluster) where this start called: Bridgette_40 (FA), Eileen_36 (FA), FosterFrank_42 (FA), Judy_41 (FA), LilyBell_40 (FA), LittleRon_38 (FA), NidoQ_35 (FA), Peas_37 (FA),

Start 23:
• Found in 34 of 84 (40.5%) of genes in pham

• Manual Annotations of this start: 17 of 65
• Called 64.7% of time when present
• Phage (with cluster) where this start called: Alatato_33 (FB), Bauer_43 (FN), BellaJr_41 (FN), BlackSpider_38 (FN), BrayBeast_35 (FB), ChuckDuck_41 (FA), Constance_40 (FA), CosmicBrownie_47 (AY), Gibbzilla_38 (FB), GlobiWarming_40 (FA), GumGum_50 (AY), Hestia_44 (AY), JeanClaude_37 (FB), KayMoney_40 (FA), MargaretKali_32 (FB), Nyilah_50 (AY), Pigu_33 (FB), RootBeer_31 (FA), Sarge_32 (FB), Shoya_39 (FB), Shukran_46 (AY), Zucker_42 (FN),

Start 24:
• Found in 2 of 84 (2.4%) of genes in pham
• Manual Annotations of this start: 1 of 65
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Farewell_49 (AF),

Start 25:
• Found in 15 of 84 (17.9%) of genes in pham
• Manual Annotations of this start: 10 of 65
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alatato_34 (FB), ArV2_35 (singleton), Bauer_44 (FN), CosmicBrownie_48 (AY), Gibbzilla_39 (FB), GumGum_51 (AY), Hestia_45 (AY), JeanClaude_38 (FB), Maja_33 (FO), Nyilah_51 (AY), Pigu_34 (FB), Rooter_36 (FB), Sarge_33 (FB), Shoya_40 (FB), Zucker_43 (FN),

Start 26:
• Found in 2 of 84 (2.4%) 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: 32HC_49 (Z), Rem711_48 (Z),

Start 27:
• Found in 7 of 84 (8.3%) of genes in pham
• Manual Annotations of this start: 2 of 65
• Called 28.6% of time when present
• Phage (with cluster) where this start called: B22_32 (BW), Doucette_34 (BW),

Start 33:
• Found in 7 of 84 (8.3%) of genes in pham
• Manual Annotations of this start: 2 of 65
• Called 28.6% of time when present
• Phage (with cluster) where this start called: Ding_42 (AY), Rooter_35 (FB),

Start 36:
• Found in 4 of 84 (4.8%) of genes in pham
• Manual Annotations of this start: 1 of 65
• Called 25.0% of time when present
• Phage (with cluster) where this start called: G4_32 (BW),

Summary by clusters:

There are 12 clusters represented in this pham: singleton, AF, DB, FB, AN, FA, BV, BW, AY, Z, FN, FO,

Info for manual annotations of cluster AF:
•Start number 15 was manually annotated 1 time for cluster AF.
•Start number 24 was manually annotated 1 time for cluster AF.

Info for manual annotations of cluster AN:
•Start number 8 was manually annotated 1 time for cluster AN.

Info for manual annotations of cluster AY:
•Start number 15 was manually annotated 1 time for cluster AY.
•Start number 23 was manually annotated 2 times for cluster AY.
•Start number 25 was manually annotated 1 time for cluster AY.
•Start number 33 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster BV:
•Start number 11 was manually annotated 1 time for cluster BV.
•Start number 16 was manually annotated 1 time for cluster BV.
•Start number 17 was manually annotated 1 time for cluster BV.

Info for manual annotations of cluster BW:
•Start number 17 was manually annotated 1 time for cluster BW.
•Start number 27 was manually annotated 2 times for cluster BW.
•Start number 36 was manually annotated 1 time for cluster BW.

Info for manual annotations of cluster DB:
•Start number 14 was manually annotated 3 times for cluster DB.

Info for manual annotations of cluster FA:
•Start number 15 was manually annotated 10 times for cluster FA.
•Start number 19 was manually annotated 5 times for cluster FA.
•Start number 23 was manually annotated 5 times for cluster FA.

Info for manual annotations of cluster FB:
•Start number 12 was manually annotated 1 time for cluster FB.
•Start number 15 was manually annotated 3 times for cluster FB.
•Start number 23 was manually annotated 7 times for cluster FB.
•Start number 25 was manually annotated 6 times for cluster FB.
•Start number 33 was manually annotated 1 time for cluster FB.

Info for manual annotations of cluster FN:
•Start number 15 was manually annotated 1 time for cluster FN.
•Start number 23 was manually annotated 3 times for cluster FN.
•Start number 25 was manually annotated 2 times for cluster FN.

Info for manual annotations of cluster FO:
•Start number 10 was manually annotated 1 time for cluster FO.
•Start number 25 was manually annotated 1 time for cluster FO.

Info for manual annotations of cluster Z:
•Start number 26 was manually annotated 1 time for cluster Z.

Gene Information:

Gene: 32HC_49 Start: 34204, Stop: 34452, Start Num: 26
Candidate Starts for 32HC_49:
(Start: 15 @34177 has 16 MA's), (Start: 26 @34204 has 1 MA's), (29, 34213), (42, 34267), (46, 34282), (47, 34288), (58, 34363),

Gene: Alatato_33 Start: 25274, Stop: 25020, Start Num: 23
Candidate Starts for Alatato_33:
(Start: 23 @25274 has 17 MA's), (Start: 33 @25241 has 2 MA's), (40, 25217), (68, 25073),

Gene: Alatato_34 Start: 25489, Stop: 25716, Start Num: 25
Candidate Starts for Alatato_34:
(Start: 25 @25489 has 10 MA's), (41, 25549),

Gene: Anatole_31 Start: 23401, Stop: 23664, Start Num: 11
Candidate Starts for Anatole_31:
(Start: 11 @23401 has 1 MA's), (Start: 15 @23413 has 16 MA's), (Start: 17 @23422 has 2 MA's), (Start: 27 @23440 has 2 MA's), (47, 23509), (49, 23521), (50, 23527), (61, 23590), (70, 23632),

Gene: ArV2_35 Start: 24447, Stop: 24674, Start Num: 25
Candidate Starts for ArV2_35:
(Start: 25 @24447 has 10 MA's),

Gene: B22_32 Start: 23397, Stop: 23636, Start Num: 27
Candidate Starts for B22_32:
(7, 23325), (9, 23346), (Start: 16 @23376 has 1 MA's), (Start: 27 @23397 has 2 MA's), (Start: 36 @23433 has 1 MA's), (51, 23502), (55, 23526), (68, 23592),

Gene: B3_31 Start: 23506, Stop: 23766, Start Num: 16
Candidate Starts for B3_31:
(Start: 16 @23506 has 1 MA's), (Start: 27 @23527 has 2 MA's), (Start: 36 @23563 has 1 MA's), (51, 23632), (55, 23656), (68, 23722),

Gene: BBQValindra_40 Start: 33028, Stop: 33285, Start Num: 14
Candidate Starts for BBQValindra_40:
(Start: 14 @33028 has 3 MA's), (28, 33061), (61, 33217), (69, 33256),

Gene: Bauer_44 Start: 29731, Stop: 29958, Start Num: 25
Candidate Starts for Bauer_44:
(Start: 25 @29731 has 10 MA's),

Gene: Bauer_43 Start: 29569, Stop: 29315, Start Num: 23
Candidate Starts for Bauer_43:
(2, 29710), (3, 29701), (Start: 10 @29605 has 1 MA's), (20, 29575), (Start: 23 @29569 has 17 MA's), (35, 29533), (40, 29512), (44, 29497), (47, 29482), (50, 29464), (57, 29419), (58, 29413), (67, 29371),

Gene: BellaJr_42 Start: 30243, Stop: 30515, Start Num: 15
Candidate Starts for BellaJr_42:
(Start: 15 @30243 has 16 MA's), (62, 30441), (72, 30492),

Gene: BellaJr_41 Start: 30090, Stop: 29830, Start Num: 23
Candidate Starts for BellaJr_41:
(Start: 23 @30090 has 17 MA's), (44, 30018), (54, 29958), (58, 29934), (70, 29880),

Gene: BlackSpider_39 Start: 28835, Stop: 29107, Start Num: 15
Candidate Starts for BlackSpider_39:
(Start: 15 @28835 has 16 MA's), (62, 29033), (72, 29084),

Gene: BlackSpider_38 Start: 28682, Stop: 28422, Start Num: 23
Candidate Starts for BlackSpider_38:
(Start: 23 @28682 has 17 MA's), (44, 28610), (54, 28550), (58, 28526), (70, 28472),

Gene: BrayBeast_35 Start: 26036, Stop: 25785, Start Num: 23
Candidate Starts for BrayBeast_35:
(Start: 12 @26069 has 1 MA's), (Start: 23 @26036 has 17 MA's), (44, 25961), (54, 25901), (57, 25883), (58, 25877), (63, 25859),

Gene: BrayBeast_36 Start: 26166, Stop: 26420, Start Num: 15
Candidate Starts for BrayBeast_36:
(Start: 15 @26166 has 16 MA's), (66, 26370),

Gene: Bridgette_40 Start: 28778, Stop: 28521, Start Num: 19
Candidate Starts for Bridgette_40:
(Start: 19 @28778 has 5 MA's), (Start: 23 @28769 has 17 MA's), (30, 28748), (41, 28709), (48, 28673), (49, 28670), (52, 28655), (53, 28649), (54, 28637), (58, 28613), (70, 28559),

Gene: Bridgette_41 Start: 28919, Stop: 29173, Start Num: 15
Candidate Starts for Bridgette_41:
(Start: 15 @28919 has 16 MA's), (44, 29003), (45, 29009),

Gene: ChuckDuck_41 Start: 28592, Stop: 28344, Start Num: 23
Candidate Starts for ChuckDuck_41:
(Start: 19 @28601 has 5 MA's), (Start: 23 @28592 has 17 MA's), (30, 28571), (41, 28532), (48, 28496), (49, 28493), (52, 28478), (53, 28472), (54, 28460), (58, 28436), (70, 28382),

Gene: ChuckDuck_42 Start: 28742, Stop: 28996, Start Num: 15
Candidate Starts for ChuckDuck_42:
(Start: 15 @28742 has 16 MA's), (44, 28826), (45, 28832),

Gene: Constance_40 Start: 28921, Stop: 28673, Start Num: 23
Candidate Starts for Constance_40:
(Start: 19 @28930 has 5 MA's), (Start: 23 @28921 has 17 MA's), (30, 28900), (41, 28861), (48, 28825), (49, 28822), (52, 28807), (53, 28801), (54, 28789), (58, 28765), (70, 28711),

Gene: Constance_41 Start: 29071, Stop: 29325, Start Num: 15
Candidate Starts for Constance_41:
(Start: 15 @29071 has 16 MA's), (44, 29155), (45, 29161),

Gene: CosmicBrownie_48 Start: 30817, Stop: 31044, Start Num: 25
Candidate Starts for CosmicBrownie_48:
(Start: 25 @30817 has 10 MA's), (38, 30865), (39, 30868), (69, 31024), (71, 31036),

Gene: CosmicBrownie_47 Start: 30617, Stop: 30363, Start Num: 23
Candidate Starts for CosmicBrownie_47:
(Start: 10 @30653 has 1 MA's), (Start: 23 @30617 has 17 MA's), (40, 30560), (58, 30461), (59, 30455), (67, 30419), (68, 30416), (69, 30410),

Gene: Ding_42 Start: 30530, Stop: 30309, Start Num: 33
Candidate Starts for Ding_42:
(Start: 23 @30563 has 17 MA's), (Start: 33 @30530 has 2 MA's), (40, 30506), (67, 30365), (68, 30362),

Gene: Doucette_34 Start: 24811, Stop: 25050, Start Num: 27
Candidate Starts for Doucette_34:
(7, 24739), (9, 24760), (Start: 16 @24790 has 1 MA's), (Start: 27 @24811 has 2 MA's), (Start: 36 @24847 has 1 MA's), (51, 24916), (55, 24940), (68, 25006),

Gene: E1_31 Start: 23422, Stop: 23664, Start Num: 17
Candidate Starts for E1_31:
(Start: 11 @23401 has 1 MA's), (Start: 15 @23413 has 16 MA's), (Start: 17 @23422 has 2 MA's), (Start: 27 @23440 has 2 MA's), (47, 23509), (49, 23521), (50, 23527), (61, 23590), (70, 23632),

Gene: E6_31 Start: 23144, Stop: 23386, Start Num: 17
Candidate Starts for E6_31:
(Start: 11 @23123 has 1 MA's), (Start: 15 @23135 has 16 MA's), (Start: 17 @23144 has 2 MA's), (Start: 27 @23162 has 2 MA's), (47, 23231), (49, 23243), (50, 23249), (61, 23312), (70, 23354),

Gene: Eileen_37 Start: 27149, Stop: 27403, Start Num: 15
Candidate Starts for Eileen_37:
(Start: 15 @27149 has 16 MA's), (44, 27233), (45, 27239),

Gene: Eileen_36 Start: 27008, Stop: 26751, Start Num: 19
Candidate Starts for Eileen_36:
(Start: 19 @27008 has 5 MA's), (Start: 23 @26999 has 17 MA's), (30, 26978), (41, 26939), (48, 26903), (49, 26900), (52, 26885), (53, 26879), (54, 26867), (58, 26843), (70, 26789),

Gene: Farewell_49 Start: 36104, Stop: 36349, Start Num: 24
Candidate Starts for Farewell_49:
(5, 36020), (13, 36077), (Start: 15 @36083 has 16 MA's), (Start: 17 @36092 has 2 MA's), (22, 36101), (Start: 24 @36104 has 1 MA's), (28, 36113), (31, 36125), (34, 36137), (38, 36152), (50, 36209),

Gene: FosterFrank_43 Start: 28801, Stop: 29055, Start Num: 15
Candidate Starts for FosterFrank_43:
(Start: 15 @28801 has 16 MA's), (44, 28885), (45, 28891),

Gene: FosterFrank_42 Start: 28660, Stop: 28403, Start Num: 19
Candidate Starts for FosterFrank_42:
(Start: 19 @28660 has 5 MA's), (Start: 23 @28651 has 17 MA's), (30, 28630), (41, 28591), (48, 28555), (49, 28552), (52, 28537), (53, 28531), (54, 28519), (58, 28495), (70, 28441),

Gene: G4_32 Start: 24466, Stop: 24669, Start Num: 36
Candidate Starts for G4_32:
(Start: 16 @24409 has 1 MA's), (Start: 27 @24430 has 2 MA's), (Start: 36 @24466 has 1 MA's), (51, 24535), (55, 24559), (68, 24625),

Gene: GEazy_45 Start: 32607, Stop: 32864, Start Num: 14
Candidate Starts for GEazy_45:
(Start: 14 @32607 has 3 MA's), (28, 32640), (56, 32772), (61, 32796),

Gene: Gibbzilla_39 Start: 26748, Stop: 26975, Start Num: 25
Candidate Starts for Gibbzilla_39:

(Start: 25 @26748 has 10 MA's), (41, 26808), (60, 26913),

Gene: Gibbzilla_38 Start: 26546, Stop: 26292, Start Num: 23
Candidate Starts for Gibbzilla_38:
(Start: 23 @26546 has 17 MA's), (Start: 33 @26513 has 2 MA's), (40, 26489), (58, 26390), (68, 26345),

Gene: GlobiWarming_40 Start: 28175, Stop: 27927, Start Num: 23
Candidate Starts for GlobiWarming_40:
(Start: 19 @28184 has 5 MA's), (Start: 23 @28175 has 17 MA's), (30, 28154), (41, 28115), (48, 28079), (49, 28076), (52, 28061), (53, 28055), (54, 28043), (58, 28019), (70, 27965),

Gene: GlobiWarming_41 Start: 28325, Stop: 28579, Start Num: 15
Candidate Starts for GlobiWarming_41:
(Start: 15 @28325 has 16 MA's), (44, 28409), (45, 28415),

Gene: GumGum_50 Start: 31036, Stop: 30782, Start Num: 23
Candidate Starts for GumGum_50:
(Start: 10 @31072 has 1 MA's), (Start: 23 @31036 has 17 MA's), (40, 30979), (58, 30880), (59, 30874), (67, 30838), (68, 30835), (69, 30829),

Gene: GumGum_51 Start: 31236, Stop: 31463, Start Num: 25
Candidate Starts for GumGum_51:
(Start: 25 @31236 has 10 MA's), (38, 31284), (39, 31287), (69, 31443), (71, 31455),

Gene: HannahD_43 Start: 31974, Stop: 32231, Start Num: 14
Candidate Starts for HannahD_43:
(Start: 14 @31974 has 3 MA's), (28, 32007), (56, 32139), (61, 32163),

Gene: Hestia_44 Start: 29360, Stop: 29106, Start Num: 23
Candidate Starts for Hestia_44:
(21, 29366), (Start: 23 @29360 has 17 MA's), (37, 29315), (40, 29303), (44, 29288), (47, 29273), (50, 29255), (58, 29204), (63, 29186),

Gene: Hestia_45 Start: 29565, Stop: 29792, Start Num: 25
Candidate Starts for Hestia_45:
(Start: 25 @29565 has 10 MA's), (54, 29697),

Gene: JeanClaude_37 Start: 25039, Stop: 24785, Start Num: 23
Candidate Starts for JeanClaude_37:
(Start: 23 @25039 has 17 MA's), (Start: 33 @25006 has 2 MA's), (40, 24982), (47, 24952), (68, 24838),

Gene: JeanClaude_38 Start: 25241, Stop: 25468, Start Num: 25
Candidate Starts for JeanClaude_38:
(Start: 25 @25241 has 10 MA's), (41, 25301), (60, 25406),

Gene: Judy_42 Start: 29237, Stop: 29491, Start Num: 15
Candidate Starts for Judy_42:
(Start: 15 @29237 has 16 MA's), (44, 29321), (45, 29327),

Gene: Judy_41 Start: 29096, Stop: 28839, Start Num: 19
Candidate Starts for Judy_41:
(Start: 19 @29096 has 5 MA's), (Start: 23 @29087 has 17 MA's), (30, 29066), (41, 29027), (48, 28991), (49, 28988), (52, 28973), (53, 28967), (54, 28955), (58, 28931), (70, 28877),

Gene: KayMoney_40 Start: 28264, Stop: 28016, Start Num: 23
Candidate Starts for KayMoney_40:
(Start: 19 @28273 has 5 MA's), (Start: 23 @28264 has 17 MA's), (30, 28243), (41, 28204), (48, 28168), (49, 28165), (52, 28150), (53, 28144), (54, 28132), (58, 28108), (70, 28054),

Gene: KayMoney_41 Start: 28414, Stop: 28668, Start Num: 15
Candidate Starts for KayMoney_41:
(Start: 15 @28414 has 16 MA's), (44, 28498), (45, 28504),

Gene: Kumotta_32 Start: 26058, Stop: 25768, Start Num: 12
Candidate Starts for Kumotta_32:
(1, 26229), (Start: 12 @26058 has 1 MA's), (Start: 23 @26025 has 17 MA's), (53, 25905), (57, 25875), (58, 25869), (65, 25839),

Gene: Kumotta_33 Start: 26166, Stop: 26420, Start Num: 15
Candidate Starts for Kumotta_33:
(Start: 15 @26166 has 16 MA's), (45, 26256), (73, 26400), (74, 26409),

Gene: LilyBell_41 Start: 28643, Stop: 28897, Start Num: 15
Candidate Starts for LilyBell_41:
(Start: 15 @28643 has 16 MA's), (44, 28727), (45, 28733),

Gene: LilyBell_40 Start: 28502, Stop: 28245, Start Num: 19
Candidate Starts for LilyBell_40:
(Start: 19 @28502 has 5 MA's), (Start: 23 @28493 has 17 MA's), (30, 28472), (41, 28433), (48, 28397), (49, 28394), (52, 28379), (53, 28373), (54, 28361), (58, 28337), (70, 28283),

Gene: LittleRon_38 Start: 27882, Stop: 27625, Start Num: 19
Candidate Starts for LittleRon_38:
(Start: 19 @27882 has 5 MA's), (Start: 23 @27873 has 17 MA's), (30, 27852), (41, 27813), (48, 27777), (49, 27774), (52, 27759), (53, 27753), (54, 27741), (58, 27717), (70, 27663),

Gene: LittleRon_39 Start: 28023, Stop: 28277, Start Num: 15
Candidate Starts for LittleRon_39:
(Start: 15 @28023 has 16 MA's), (44, 28107), (45, 28113),

Gene: Maja_32 Start: 26527, Stop: 26237, Start Num: 10
Candidate Starts for Maja_32:
(Start: 10 @26527 has 1 MA's), (Start: 23 @26491 has 17 MA's), (Start: 33 @26458 has 2 MA's), (40, 26434), (67, 26293), (69, 26284),

Gene: Maja_33 Start: 26682, Stop: 26909, Start Num: 25
Candidate Starts for Maja_33:
(Start: 25 @26682 has 10 MA's), (38, 26730), (69, 26889),

Gene: MargaretKali_32 Start: 25660, Stop: 25403, Start Num: 23
Candidate Starts for MargaretKali_32:
(1, 25864), (Start: 12 @25693 has 1 MA's), (Start: 23 @25660 has 17 MA's), (53, 25540), (57, 25510), (58, 25504), (65, 25474),

Gene: MargaretKali_33 Start: 25801, Stop: 26055, Start Num: 15
Candidate Starts for MargaretKali_33:

(Start: 15 @25801 has 16 MA's), (45, 25891), (73, 26035), (74, 26044),

Gene: NaLuna_42 Start: 31974, Stop: 32231, Start Num: 14
Candidate Starts for NaLuna_42:
(Start: 14 @31974 has 3 MA's), (28, 32007), (56, 32139), (61, 32163),

Gene: NidoQ_36 Start: 27748, Stop: 28002, Start Num: 15
Candidate Starts for NidoQ_36:
(Start: 15 @27748 has 16 MA's), (44, 27832), (45, 27838),

Gene: NidoQ_35 Start: 27607, Stop: 27350, Start Num: 19
Candidate Starts for NidoQ_35:
(Start: 19 @27607 has 5 MA's), (Start: 23 @27598 has 17 MA's), (30, 27577), (41, 27538), (48, 27502), (49, 27499), (52, 27484), (53, 27478), (54, 27466), (58, 27442), (70, 27388),

Gene: Nyilah_51 Start: 30452, Stop: 30679, Start Num: 25
Candidate Starts for Nyilah_51:
(Start: 25 @30452 has 10 MA's), (38, 30500), (39, 30503), (69, 30659), (71, 30671),

Gene: Nyilah_50 Start: 30252, Stop: 29998, Start Num: 23
Candidate Starts for Nyilah_50:
(Start: 10 @30288 has 1 MA's), (Start: 23 @30252 has 17 MA's), (40, 30195), (58, 30096), (59, 30090), (67, 30054), (68, 30051), (69, 30045),

Gene: Peas_38 Start: 29296, Stop: 29550, Start Num: 15
Candidate Starts for Peas_38:
(Start: 15 @29296 has 16 MA's), (44, 29380), (45, 29386),

Gene: Peas_37 Start: 29155, Stop: 28898, Start Num: 19
Candidate Starts for Peas_37:
(Start: 19 @29155 has 5 MA's), (Start: 23 @29146 has 17 MA's), (30, 29125), (41, 29086), (48, 29050), (49, 29047), (52, 29032), (53, 29026), (54, 29014), (58, 28990), (70, 28936),

Gene: Pigu_33 Start: 25236, Stop: 24982, Start Num: 23
Candidate Starts for Pigu_33:
(20, 25242), (Start: 23 @25236 has 17 MA's), (35, 25200), (37, 25191), (40, 25179), (44, 25164), (47, 25149), (50, 25131), (58, 25080), (66, 25044),

Gene: Pigu_34 Start: 25386, Stop: 25616, Start Num: 25
Candidate Starts for Pigu_34:
(4, 25272), (6, 25299), (Start: 25 @25386 has 10 MA's),

Gene: Rem711_48 Start: 34188, Stop: 34436, Start Num: 26
Candidate Starts for Rem711_48:
(Start: 15 @34161 has 16 MA's), (Start: 26 @34188 has 1 MA's), (29, 34197), (42, 34251), (46, 34266), (47, 34272), (58, 34347),

Gene: RootBeer_31 Start: 25049, Stop: 24801, Start Num: 23
Candidate Starts for RootBeer_31:
(Start: 19 @25058 has 5 MA's), (Start: 23 @25049 has 17 MA's), (30, 25028), (41, 24989), (48, 24953), (49, 24950), (52, 24935), (53, 24929), (54, 24917), (58, 24893), (70, 24839),

Gene: RootBeer_32 Start: 25199, Stop: 25453, Start Num: 15

Candidate Starts for RootBeer_32:
(Start: 15 @25199 has 16 MA's), (44, 25283), (45, 25289),

Gene: Rooter_35 Start: 25498, Stop: 25277, Start Num: 33
Candidate Starts for Rooter_35:
(Start: 23 @25531 has 17 MA's), (Start: 33 @25498 has 2 MA's), (40, 25474), (58, 25375), (68, 25330),

Gene: Rooter_36 Start: 25733, Stop: 25960, Start Num: 25
Candidate Starts for Rooter_36:
(Start: 25 @25733 has 10 MA's), (41, 25793), (60, 25898),

Gene: Sarge_33 Start: 24068, Stop: 24295, Start Num: 25
Candidate Starts for Sarge_33:
(Start: 25 @24068 has 10 MA's), (48, 24164), (60, 24233),

Gene: Sarge_32 Start: 23905, Stop: 23651, Start Num: 23
Candidate Starts for Sarge_32:
(21, 23911), (Start: 23 @23905 has 17 MA's), (35, 23869), (40, 23848), (44, 23833), (47, 23818), (50, 23800), (57, 23755), (58, 23749), (67, 23707),

Gene: Shoya_39 Start: 26307, Stop: 26053, Start Num: 23
Candidate Starts for Shoya_39:
(Start: 23 @26307 has 17 MA's), (Start: 33 @26274 has 2 MA's), (40, 26250), (58, 26151), (68, 26106),

Gene: Shoya_40 Start: 26509, Stop: 26736, Start Num: 25
Candidate Starts for Shoya_40:
(Start: 25 @26509 has 10 MA's), (41, 26569), (60, 26674),

Gene: Shukran_47 Start: 30205, Stop: 30456, Start Num: 15
Candidate Starts for Shukran_47:
(Start: 15 @30205 has 16 MA's),

Gene: Shukran_46 Start: 30056, Stop: 29808, Start Num: 23
Candidate Starts for Shukran_46:
(Start: 15 @30077 has 16 MA's), (Start: 23 @30056 has 17 MA's), (30, 30035), (44, 29984), (54, 29924), (58, 29900), (69, 29849), (70, 29846),

Gene: Sparky_48 Start: 36514, Stop: 36780, Start Num: 15
Candidate Starts for Sparky_48:
(5, 36451), (13, 36508), (Start: 15 @36514 has 16 MA's), (Start: 17 @36523 has 2 MA's), (22, 36532), (Start: 24 @36535 has 1 MA's), (28, 36544), (31, 36556), (34, 36568), (38, 36583), (50, 36640),

Gene: Vinye_23 Start: 14300, Stop: 13992, Start Num: 8
Candidate Starts for Vinye_23:
(Start: 8 @14300 has 1 MA's), (18, 14264), (32, 14225), (43, 14186), (44, 14180), (64, 14069),

Gene: Zucker_43 Start: 30252, Stop: 30479, Start Num: 25
Candidate Starts for Zucker_43:
(Start: 25 @30252 has 10 MA's), (38, 30300), (39, 30303), (69, 30459), (71, 30471),

Gene: Zucker_42 Start: 30051, Stop: 29797, Start Num: 23
Candidate Starts for Zucker_42:

(Start: 10 @30087 has 1 MA's), (Start: 23 @30051 has 17 MA's), (40, 29994), (58, 29895), (59, 29889), (67, 29853), (68, 29850), (69, 29844),