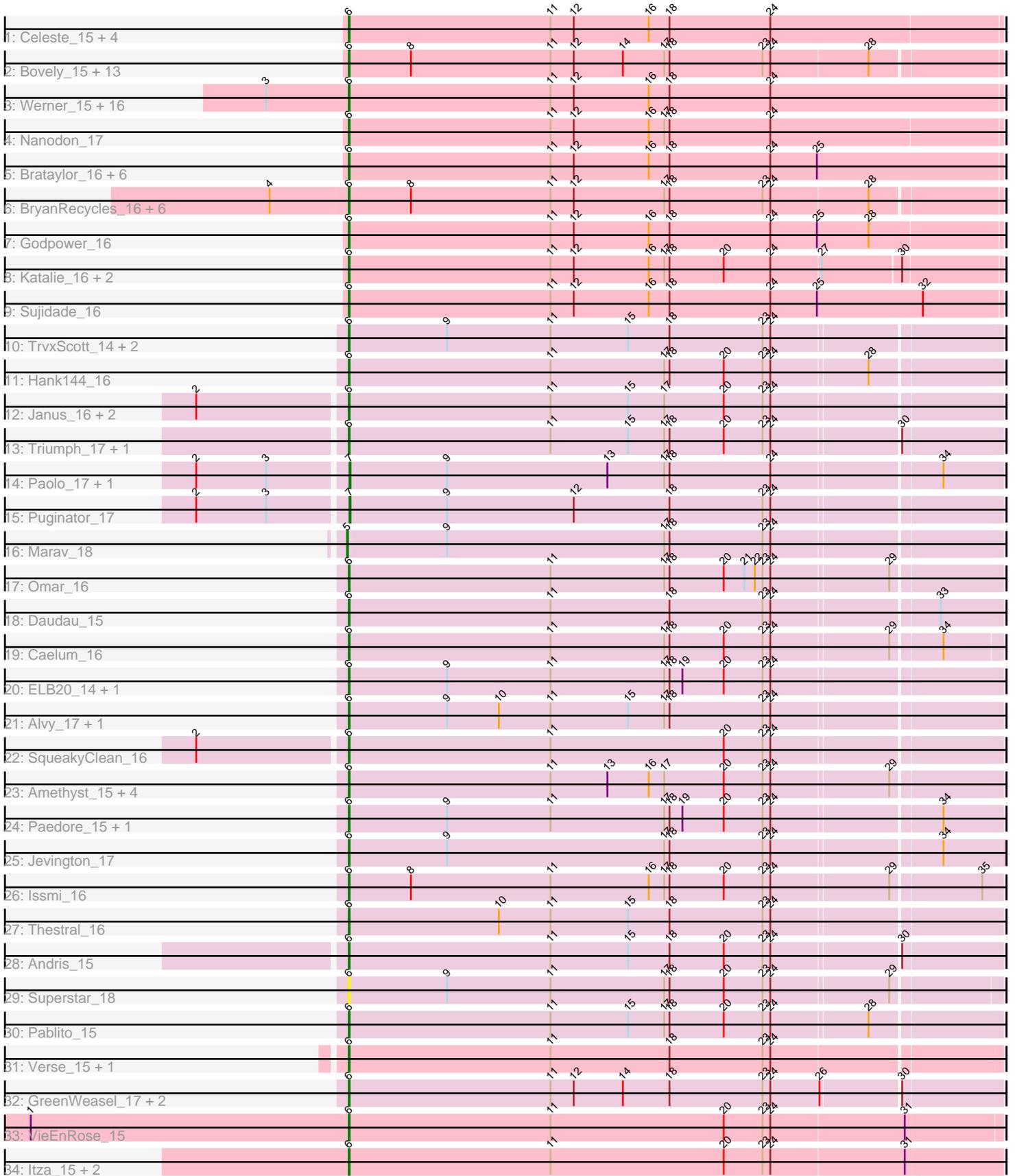# Pham 282117

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 282117 Report

This analysis was run 02/23/26 on database version 636.

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 282117 has 99 members, 2 are drafts.

Phages represented in each track:
• Track 1 : Celeste_15, Lannister_16, Goby_15, Dattran_16, Toma_15
• Track 2 : Bovely_15, Esperer_15, SunsetPointe_15, Indigo_15, Nerdos_15, Ozzie_15, Caliburn_15, Hydra_17, Aaronocolus_15, Leviticus_15, Unstoppable_15, Legacy_15, BeardedLady_16, Phettuccine_15
• Track 3 : Werner_15, Yasdnil_15, Whatever_15, Chucky_15, OzzyJ_16, Hippo_15, Snorlax_15, TagePhighter_16, SarahRose_15, BarryBee_17, Emaanora_17, TuanPN_15, Asten_15, Dwayne_15, Maneekul_15, Triste_15, Ejemplo_15
• Track 4 : Nanodon_17
• Track 5 : Brataylor_16, Zemlya_16, Nabi_15, Lorelei_15, Lika_15, Rana_15, Danzina_16
• Track 6 : BryanRecycles_16, Oliynyk_16, Rusticus_16, Eddasa_16, Izzy_16, EnochSoames_16, Jash_16
• Track 7 : Godpower_16
• Track 8 : Katalie_16, RedBear_17, South40_16
• Track 9 : Sujidade_16
• Track 10 : TrvxScott_14, Bowden_16, TinaBelcher_15
• Track 11 : Hank144_16
• Track 12 : Janus_16, GirlDinner_15, Animus_16
• Track 13 : Triumph_17, Axiom_16
• Track 14 : Paolo_17, Zainub_17
• Track 15 : Puginator_17
• Track 16 : Marav_18
• Track 17 : Omar_16
• Track 18 : Daudau_15
• Track 19 : Caelum_16
• Track 20 : ELB20_14, R4_15
• Track 21 : Alvy_17, BartholomewSD_17
• Track 22 : SqueakyClean_16
• Track 23 : Amethyst_15, Haizum_15, Tefunt_15, Nishikigoi_15, Diane_15
• Track 24 : Paedore_15, Loofah_16
• Track 25 : Jevington_17
• Track 26 : Issmi_16
• Track 27 : Thestral_16

- Track 28 : Andris_15
- Track 29 : Superstar_18
- Track 30 : Pablito_15
- Track 31 : Verse_15, Amela_15
- Track 32 : GreenWeasel_17, BroPlease_16, phiHau3_17
- Track 33 : VieEnRose_15
- Track 34 : Itza_15, Celia_15, Urza_15

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

The start number called the most often in the published annotations is 6, it was called in 93 of the 97 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- Aaronocolus_15, Alvy_17, Amela_15, Amethyst_15, Andris_15, Animus_16, Asten_15, Axiom_16, BarryBee_17, BartholomewSD_17, BeardedLady_16, Bovely_15, Bowden_16, Brataylor_16, BroPlease_16, BryanRecycles_16, Caelum_16, Caliburn_15, Celeste_15, Celia_15, Chucky_15, Danzina_16, Dattran_16, Daudau_15, Diane_15, Dwayne_15, ELB20_14, Eddasa_16, Ejemplo_15, Emaanora_17, EnochSoames_16, Esperer_15, GirlDinner_15, Goby_15, Godpower_16, GreenWeasel_17, Haizum_15, Hank144_16, Hippo_15, Hydra_17, Indigo_15, Issmi_16, Itza_15, Izzy_16, Janus_16, Jash_16, Jevington_17, Katalie_16, Lannister_16, Legacy_15, Leviticus_15, Lika_15, Loofah_16, Lorelei_15, Maneekul_15, Nabi_15, Nanodon_17, Nerdos_15, Nishikigoi_15, Oliynyk_16, Omar_16, Ozzie_15, OzzyJ_16, Pablito_15, Paedore_15, Phettuccine_15, R4_15, Rana_15, RedBear_17, Rusticus_16, SarahRose_15, Snorlax_15, South40_16, SqueakyClean_16, Sujidade_16, SunsetPointe_15, Superstar_18, TagePhighter_16, Tefunt_15, Thestral_16, TinaBelcher_15, Toma_15, Triste_15, Triumph_17, TrvxScott_14, TuanPN_15, Unstoppable_15, Urza_15, Verse_15, VieEnRose_15, Werner_15, Whatever_15, Yasdnil_15, Zemlya_16, phiHau3_17,

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

Genes that do not have the "Most Annotated" start:
- Marav_18, Paolo_17, Puginator_17, Zainub_17,

Summary by start number:

Start 5:
- Found in 1 of 99 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 97
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Marav_18 (BD2),

Start 6:
- Found in 95 of 99 (96.0%) of genes in pham
- Manual Annotations of this start: 93 of 97
- Called 100.0% of time when present

• Phage (with cluster) where this start called: Aaronocolus_15 (BD1), Alvy_17 (BD2), Amela_15 (BD3), Amethyst_15 (BD2), Andris_15 (BD2), Animus_16 (BD2), Asten_15 (BD1), Axiom_16 (BD2), BarryBee_17 (BD1), BartholomewSD_17 (BD2), BeardedLady_16 (BD1), Bovely_15 (BD1), Bowden_16 (BD2), Brataylor_16 (BD1), BroPlease_16 (BD4), BryanRecycles_16 (BD1), Caelum_16 (BD2), Caliburn_15 (BD1), Celeste_15 (BD1), Celia_15 (BD6), Chucky_15 (BD1), Danzina_16 (BD1), Dattran_16 (BD1), Daudau_15 (BD2), Diane_15 (BD2), Dwayne_15 (BD1), ELB20_14 (BD2), Eddasa_16 (BD1), Ejemplo_15 (BD1), Emaanora_17 (BD1), EnochSoames_16 (BD1), Esperer_15 (BD1), GirlDinner_15 (BD2), Goby_15 (BD1), Godpower_16 (BD1), GreenWeasel_17 (BD4), Haizum_15 (BD2), Hank144_16 (BD2), Hippo_15 (BD1), Hydra_17 (BD1), Indigo_15 (BD1), Issmi_16 (BD2), Itza_15 (BD6), Izzy_16 (BD1), Janus_16 (BD2), Jash_16 (BD1), Jevington_17 (BD2), Katalie_16 (BD1), Lannister_16 (BD1), Legacy_15 (BD1), Leviticus_15 (BD1), Lika_15 (BD1), Loofah_16 (BD2), Lorelei_15 (BD1), Maneekul_15 (BD1), Nabi_15 (BD1), Nanodon_17 (BD1), Nerdos_15 (BD1), Nishikigoi_15 (BD2), Oliynyk_16 (BD1), Omar_16 (BD2), Ozzie_15 (BD1), OzzyJ_16 (BD1), Pablito_15 (BD2), Paedore_15 (BD2), Phettuccine_15 (BD1), R4_15 (BD2), Rana_15 (BD1), RedBear_17 (BD1), Rusticus_16 (BD1), SarahRose_15 (BD1), Snorlax_15 (BD1), South40_16 (BD1), SqueakyClean_16 (BD2), Sujidade_16 (BD1), SunsetPointe_15 (BD1), Superstar_18 (BD2), TagePhighter_16 (BD1), Tefunt_15 (BD2), Thestral_16 (BD2), TinaBelcher_15 (BD2), Toma_15 (BD1), Triste_15 (BD1), Triumph_17 (BD2), TrvxScott_14 (BD2), TuanPN_15 (BD1), Unstoppable_15 (BD1), Urza_15 (BD6), Verse_15 (BD3), VieEnRose_15 (BD6), Werner_15 (BD1), Whatever_15 (BD1), Yasdnil_15 (BD1), Zemlya_16 (BD1), phiHau3_17 (BD4),

Start 7:
• Found in 3 of 99 (3.0%) of genes in pham
• Manual Annotations of this start: 3 of 97
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Paolo_17 (BD2), Puginator_17 (BD2), Zainub_17 (BD2),

Summary by clusters:

There are 5 clusters represented in this pham: BD4, BD6, BD1, BD3, BD2,

Info for manual annotations of cluster BD1:
•Start number 6 was manually annotated 55 times for cluster BD1.

Info for manual annotations of cluster BD2:
•Start number 5 was manually annotated 1 time for cluster BD2.
•Start number 6 was manually annotated 29 times for cluster BD2.
•Start number 7 was manually annotated 3 times for cluster BD2.

Info for manual annotations of cluster BD3:
•Start number 6 was manually annotated 2 times for cluster BD3.

Info for manual annotations of cluster BD4:
•Start number 6 was manually annotated 3 times for cluster BD4.

Info for manual annotations of cluster BD6:
•Start number 6 was manually annotated 4 times for cluster BD6.

Gene Information:

Gene: Aaronocolus_15 Start: 10095, Stop: 10838, Start Num: 6
Candidate Starts for Aaronocolus_15:
(Start: 6 @10095 has 93 MA's), (8, 10167), (11, 10329), (12, 10356), (14, 10413), (17, 10461), (18, 10467), (23, 10575), (24, 10584), (28, 10695),

Gene: Alvy_17 Start: 10094, Stop: 10834, Start Num: 6
Candidate Starts for Alvy_17:
(Start: 6 @10094 has 93 MA's), (9, 10208), (10, 10268), (11, 10328), (15, 10418), (17, 10460), (18, 10466), (23, 10574), (24, 10583),

Gene: Amela_15 Start: 10262, Stop: 11005, Start Num: 6
Candidate Starts for Amela_15:
(Start: 6 @10262 has 93 MA's), (11, 10496), (18, 10634), (23, 10742), (24, 10751),

Gene: Amethyst_15 Start: 9916, Stop: 10656, Start Num: 6
Candidate Starts for Amethyst_15:
(Start: 6 @9916 has 93 MA's), (11, 10150), (13, 10216), (16, 10264), (17, 10282), (20, 10351), (23, 10396), (24, 10405), (29, 10537),

Gene: Andris_15 Start: 9902, Stop: 10642, Start Num: 6
Candidate Starts for Andris_15:
(Start: 6 @9902 has 93 MA's), (11, 10136), (15, 10226), (18, 10274), (20, 10337), (23, 10382), (24, 10391), (30, 10532),

Gene: Animus_16 Start: 10255, Stop: 10995, Start Num: 6
Candidate Starts for Animus_16:
(2, 10087), (Start: 6 @10255 has 93 MA's), (11, 10489), (15, 10579), (17, 10621), (20, 10690), (23, 10735), (24, 10744),

Gene: Asten_15 Start: 10053, Stop: 10805, Start Num: 6
Candidate Starts for Asten_15:
(3, 9957), (Start: 6 @10053 has 93 MA's), (11, 10287), (12, 10314), (16, 10401), (18, 10425), (24, 10542),

Gene: Axiom_16 Start: 9940, Stop: 10680, Start Num: 6
Candidate Starts for Axiom_16:
(Start: 6 @9940 has 93 MA's), (11, 10174), (15, 10264), (17, 10306), (18, 10312), (20, 10375), (23, 10420), (24, 10429), (30, 10570),

Gene: BarryBee_17 Start: 10060, Stop: 10815, Start Num: 6
Candidate Starts for BarryBee_17:
(3, 9964), (Start: 6 @10060 has 93 MA's), (11, 10294), (12, 10321), (16, 10408), (18, 10432), (24, 10549),

Gene: BartholomewSD_17 Start: 10094, Stop: 10834, Start Num: 6
Candidate Starts for BartholomewSD_17:
(Start: 6 @10094 has 93 MA's), (9, 10208), (10, 10268), (11, 10328), (15, 10418), (17, 10460), (18, 10466), (23, 10574), (24, 10583),

Gene: BeardedLady_16 Start: 10342, Stop: 11085, Start Num: 6
Candidate Starts for BeardedLady_16:
(Start: 6 @10342 has 93 MA's), (8, 10414), (11, 10576), (12, 10603), (14, 10660), (17, 10708), (18, 10714), (23, 10822), (24, 10831), (28, 10942),

Gene: Bovely_15 Start: 10101, Stop: 10844, Start Num: 6
Candidate Starts for Bovely_15:
(Start: 6 @10101 has 93 MA's), (8, 10173), (11, 10335), (12, 10362), (14, 10419), (17, 10467), (18, 10473), (23, 10581), (24, 10590), (28, 10701),

Gene: Bowden_16 Start: 10011, Stop: 10751, Start Num: 6
Candidate Starts for Bowden_16:
(Start: 6 @10011 has 93 MA's), (9, 10125), (11, 10245), (15, 10335), (18, 10383), (23, 10491), (24, 10500),

Gene: Brataylor_16 Start: 10066, Stop: 10821, Start Num: 6
Candidate Starts for Brataylor_16:
(Start: 6 @10066 has 93 MA's), (11, 10300), (12, 10327), (16, 10414), (18, 10438), (24, 10555), (25, 10609),

Gene: BroPlease_16 Start: 10267, Stop: 11007, Start Num: 6
Candidate Starts for BroPlease_16:
(Start: 6 @10267 has 93 MA's), (11, 10501), (12, 10528), (14, 10585), (18, 10639), (23, 10747), (24, 10756), (26, 10810), (30, 10897),

Gene: BryanRecycles_16 Start: 10258, Stop: 11001, Start Num: 6
Candidate Starts for BryanRecycles_16:
(4, 10168), (Start: 6 @10258 has 93 MA's), (8, 10330), (11, 10492), (12, 10519), (17, 10624), (18, 10630), (23, 10738), (24, 10747), (28, 10858),

Gene: Caelum_16 Start: 9887, Stop: 10624, Start Num: 6
Candidate Starts for Caelum_16:
(Start: 6 @9887 has 93 MA's), (11, 10121), (17, 10253), (18, 10259), (20, 10322), (23, 10367), (24, 10376), (29, 10508), (34, 10562),

Gene: Caliburn_15 Start: 10075, Stop: 10818, Start Num: 6
Candidate Starts for Caliburn_15:
(Start: 6 @10075 has 93 MA's), (8, 10147), (11, 10309), (12, 10336), (14, 10393), (17, 10441), (18, 10447), (23, 10555), (24, 10564), (28, 10675),

Gene: Celeste_15 Start: 10064, Stop: 10816, Start Num: 6
Candidate Starts for Celeste_15:
(Start: 6 @10064 has 93 MA's), (11, 10298), (12, 10325), (16, 10412), (18, 10436), (24, 10553),

Gene: Celia_15 Start: 10381, Stop: 11133, Start Num: 6
Candidate Starts for Celia_15:
(Start: 6 @10381 has 93 MA's), (11, 10615), (20, 10816), (23, 10861), (24, 10870), (31, 11023),

Gene: Chucky_15 Start: 10061, Stop: 10816, Start Num: 6
Candidate Starts for Chucky_15:
(3, 9965), (Start: 6 @10061 has 93 MA's), (11, 10295), (12, 10322), (16, 10409), (18, 10433), (24, 10550),

Gene: Danzina_16 Start: 10268, Stop: 11023, Start Num: 6
Candidate Starts for Danzina_16:
(Start: 6 @10268 has 93 MA's), (11, 10502), (12, 10529), (16, 10616), (18, 10640), (24, 10757), (25, 10811),

Gene: Dattran_16 Start: 10063, Stop: 10815, Start Num: 6
Candidate Starts for Dattran_16:
(Start: 6 @10063 has 93 MA's), (11, 10297), (12, 10324), (16, 10411), (18, 10435), (24, 10552),

Gene: Daudau_15 Start: 9998, Stop: 10738, Start Num: 6
Candidate Starts for Daudau_15:
(Start: 6 @9998 has 93 MA's), (11, 10232), (18, 10370), (23, 10478), (24, 10487), (33, 10670),

Gene: Diane_15 Start: 9915, Stop: 10655, Start Num: 6
Candidate Starts for Diane_15:
(Start: 6 @9915 has 93 MA's), (11, 10149), (13, 10215), (16, 10263), (17, 10281), (20, 10350), (23, 10395), (24, 10404), (29, 10536),

Gene: Dwayne_15 Start: 10060, Stop: 10812, Start Num: 6
Candidate Starts for Dwayne_15:
(3, 9964), (Start: 6 @10060 has 93 MA's), (11, 10294), (12, 10321), (16, 10408), (18, 10432), (24, 10549),

Gene: ELB20_14 Start: 10026, Stop: 10766, Start Num: 6
Candidate Starts for ELB20_14:
(Start: 6 @10026 has 93 MA's), (9, 10140), (11, 10260), (17, 10392), (18, 10398), (19, 10413), (20, 10461), (23, 10506), (24, 10515),

Gene: Eddasa_16 Start: 10258, Stop: 11001, Start Num: 6
Candidate Starts for Eddasa_16:
(4, 10168), (Start: 6 @10258 has 93 MA's), (8, 10330), (11, 10492), (12, 10519), (17, 10624), (18, 10630), (23, 10738), (24, 10747), (28, 10858),

Gene: Ejemplo_15 Start: 10063, Stop: 10815, Start Num: 6
Candidate Starts for Ejemplo_15:
(3, 9967), (Start: 6 @10063 has 93 MA's), (11, 10297), (12, 10324), (16, 10411), (18, 10435), (24, 10552),

Gene: Emaanora_17 Start: 10060, Stop: 10815, Start Num: 6
Candidate Starts for Emaanora_17:
(3, 9964), (Start: 6 @10060 has 93 MA's), (11, 10294), (12, 10321), (16, 10408), (18, 10432), (24, 10549),

Gene: EnochSoames_16 Start: 10254, Stop: 10997, Start Num: 6
Candidate Starts for EnochSoames_16:
(4, 10164), (Start: 6 @10254 has 93 MA's), (8, 10326), (11, 10488), (12, 10515), (17, 10620), (18, 10626), (23, 10734), (24, 10743), (28, 10854),

Gene: Esperer_15 Start: 10095, Stop: 10838, Start Num: 6
Candidate Starts for Esperer_15:
(Start: 6 @10095 has 93 MA's), (8, 10167), (11, 10329), (12, 10356), (14, 10413), (17, 10461), (18, 10467), (23, 10575), (24, 10584), (28, 10695),

Gene: GirlDinner_15 Start: 9917, Stop: 10657, Start Num: 6
Candidate Starts for GirlDinner_15:
(2, 9749), (Start: 6 @9917 has 93 MA's), (11, 10151), (15, 10241), (17, 10283), (20, 10352), (23, 10397), (24, 10406),

Gene: Goby_15 Start: 10066, Stop: 10818, Start Num: 6
Candidate Starts for Goby_15:
(Start: 6 @10066 has 93 MA's), (11, 10300), (12, 10327), (16, 10414), (18, 10438), (24, 10555),

Gene: Godpower_16 Start: 10081, Stop: 10833, Start Num: 6
Candidate Starts for Godpower_16:
(Start: 6 @10081 has 93 MA's), (11, 10315), (12, 10342), (16, 10429), (18, 10453), (24, 10570), (25, 10624), (28, 10684),

Gene: GreenWeasel_17 Start: 10276, Stop: 11016, Start Num: 6
Candidate Starts for GreenWeasel_17:
(Start: 6 @10276 has 93 MA's), (11, 10510), (12, 10537), (14, 10594), (18, 10648), (23, 10756), (24, 10765), (26, 10819), (30, 10906),

Gene: Haizum_15 Start: 9945, Stop: 10685, Start Num: 6
Candidate Starts for Haizum_15:
(Start: 6 @9945 has 93 MA's), (11, 10179), (13, 10245), (16, 10293), (17, 10311), (20, 10380), (23, 10425), (24, 10434), (29, 10566),

Gene: Hank144_16 Start: 10219, Stop: 10959, Start Num: 6
Candidate Starts for Hank144_16:
(Start: 6 @10219 has 93 MA's), (11, 10453), (17, 10585), (18, 10591), (20, 10654), (23, 10699), (24, 10708), (28, 10816),

Gene: Hippo_15 Start: 10060, Stop: 10815, Start Num: 6
Candidate Starts for Hippo_15:
(3, 9964), (Start: 6 @10060 has 93 MA's), (11, 10294), (12, 10321), (16, 10408), (18, 10432), (24, 10549),

Gene: Hydra_17 Start: 10623, Stop: 11366, Start Num: 6
Candidate Starts for Hydra_17:
(Start: 6 @10623 has 93 MA's), (8, 10695), (11, 10857), (12, 10884), (14, 10941), (17, 10989), (18, 10995), (23, 11103), (24, 11112), (28, 11223),

Gene: Indigo_15 Start: 10095, Stop: 10838, Start Num: 6
Candidate Starts for Indigo_15:
(Start: 6 @10095 has 93 MA's), (8, 10167), (11, 10329), (12, 10356), (14, 10413), (17, 10461), (18, 10467), (23, 10575), (24, 10584), (28, 10695),

Gene: Issmi_16 Start: 10216, Stop: 10956, Start Num: 6
Candidate Starts for Issmi_16:
(Start: 6 @10216 has 93 MA's), (8, 10288), (11, 10450), (16, 10564), (17, 10582), (18, 10588), (20, 10651), (23, 10696), (24, 10705), (29, 10837), (35, 10936),

Gene: Itza_15 Start: 10304, Stop: 11056, Start Num: 6
Candidate Starts for Itza_15:
(Start: 6 @10304 has 93 MA's), (11, 10538), (20, 10739), (23, 10784), (24, 10793), (31, 10946),

Gene: Izzy_16 Start: 10305, Stop: 11048, Start Num: 6
Candidate Starts for Izzy_16:
(4, 10215), (Start: 6 @10305 has 93 MA's), (8, 10377), (11, 10539), (12, 10566), (17, 10671), (18, 10677), (23, 10785), (24, 10794), (28, 10905),

Gene: Janus_16 Start: 10255, Stop: 10995, Start Num: 6
Candidate Starts for Janus_16:
(2, 10087), (Start: 6 @10255 has 93 MA's), (11, 10489), (15, 10579), (17, 10621), (20, 10690), (23, 10735), (24, 10744),

Gene: Jash_16 Start: 10258, Stop: 11001, Start Num: 6
Candidate Starts for Jash_16:
(4, 10168), (Start: 6 @10258 has 93 MA's), (8, 10330), (11, 10492), (12, 10519), (17, 10624), (18, 10630), (23, 10738), (24, 10747), (28, 10858),

Gene: Jevington_17 Start: 10542, Stop: 11288, Start Num: 6
Candidate Starts for Jevington_17:
(Start: 6 @10542 has 93 MA's), (9, 10656), (17, 10908), (18, 10914), (23, 11022), (24, 11031), (34, 11217),

Gene: Katalie_16 Start: 10336, Stop: 11079, Start Num: 6
Candidate Starts for Katalie_16:
(Start: 6 @10336 has 93 MA's), (11, 10570), (12, 10597), (16, 10684), (17, 10702), (18, 10708), (20, 10771), (24, 10825), (27, 10882), (30, 10969),

Gene: Lannister_16 Start: 10084, Stop: 10839, Start Num: 6
Candidate Starts for Lannister_16:
(Start: 6 @10084 has 93 MA's), (11, 10318), (12, 10345), (16, 10432), (18, 10456), (24, 10573),

Gene: Legacy_15 Start: 10066, Stop: 10809, Start Num: 6
Candidate Starts for Legacy_15:
(Start: 6 @10066 has 93 MA's), (8, 10138), (11, 10300), (12, 10327), (14, 10384), (17, 10432), (18, 10438), (23, 10546), (24, 10555), (28, 10666),

Gene: Leviticus_15 Start: 10095, Stop: 10838, Start Num: 6
Candidate Starts for Leviticus_15:
(Start: 6 @10095 has 93 MA's), (8, 10167), (11, 10329), (12, 10356), (14, 10413), (17, 10461), (18, 10467), (23, 10575), (24, 10584), (28, 10695),

Gene: Lika_15 Start: 10082, Stop: 10837, Start Num: 6
Candidate Starts for Lika_15:
(Start: 6 @10082 has 93 MA's), (11, 10316), (12, 10343), (16, 10430), (18, 10454), (24, 10571), (25, 10625),

Gene: Loofah_16 Start: 10057, Stop: 10797, Start Num: 6
Candidate Starts for Loofah_16:
(Start: 6 @10057 has 93 MA's), (9, 10171), (11, 10291), (17, 10423), (18, 10429), (19, 10444), (20, 10492), (23, 10537), (24, 10546), (34, 10732),

Gene: Lorelei_15 Start: 10054, Stop: 10806, Start Num: 6
Candidate Starts for Lorelei_15:
(Start: 6 @10054 has 93 MA's), (11, 10288), (12, 10315), (16, 10402), (18, 10426), (24, 10543), (25, 10597),

Gene: Maneekul_15 Start: 10062, Stop: 10814, Start Num: 6
Candidate Starts for Maneekul_15:
(3, 9966), (Start: 6 @10062 has 93 MA's), (11, 10296), (12, 10323), (16, 10410), (18, 10434), (24, 10551),

Gene: Marav_18 Start: 10892, Stop: 11632, Start Num: 5
Candidate Starts for Marav_18:
(Start: 5 @10892 has 1 MA's), (9, 11006), (17, 11258), (18, 11264), (23, 11372), (24, 11381),

Gene: Nabi_15 Start: 10054, Stop: 10806, Start Num: 6
Candidate Starts for Nabi_15:
(Start: 6 @10054 has 93 MA's), (11, 10288), (12, 10315), (16, 10402), (18, 10426), (24, 10543), (25, 10597),

Gene: Nanodon_17 Start: 10256, Stop: 11008, Start Num: 6
Candidate Starts for Nanodon_17:
(Start: 6 @10256 has 93 MA's), (11, 10490), (12, 10517), (16, 10604), (17, 10622), (18, 10628), (24, 10745),

Gene: Nerdos_15 Start: 10095, Stop: 10838, Start Num: 6
Candidate Starts for Nerdos_15:
(Start: 6 @10095 has 93 MA's), (8, 10167), (11, 10329), (12, 10356), (14, 10413), (17, 10461), (18, 10467), (23, 10575), (24, 10584), (28, 10695),

Gene: Nishikigoi_15 Start: 9945, Stop: 10685, Start Num: 6
Candidate Starts for Nishikigoi_15:
(Start: 6 @9945 has 93 MA's), (11, 10179), (13, 10245), (16, 10293), (17, 10311), (20, 10380), (23, 10425), (24, 10434), (29, 10566),

Gene: Oliynyk_16 Start: 10258, Stop: 11001, Start Num: 6
Candidate Starts for Oliynyk_16:
(4, 10168), (Start: 6 @10258 has 93 MA's), (8, 10330), (11, 10492), (12, 10519), (17, 10624), (18, 10630), (23, 10738), (24, 10747), (28, 10858),

Gene: Omar_16 Start: 10179, Stop: 10919, Start Num: 6
Candidate Starts for Omar_16:
(Start: 6 @10179 has 93 MA's), (11, 10413), (17, 10545), (18, 10551), (20, 10614), (21, 10638), (22, 10650), (23, 10659), (24, 10668), (29, 10800),

Gene: Ozzie_15 Start: 10075, Stop: 10818, Start Num: 6
Candidate Starts for Ozzie_15:
(Start: 6 @10075 has 93 MA's), (8, 10147), (11, 10309), (12, 10336), (14, 10393), (17, 10441), (18, 10447), (23, 10555), (24, 10564), (28, 10675),

Gene: OzzyJ_16 Start: 10054, Stop: 10806, Start Num: 6
Candidate Starts for OzzyJ_16:
(3, 9958), (Start: 6 @10054 has 93 MA's), (11, 10288), (12, 10315), (16, 10402), (18, 10426), (24, 10543),

Gene: Pablito_15 Start: 9915, Stop: 10655, Start Num: 6
Candidate Starts for Pablito_15:

(Start: 6 @9915 has 93 MA's), (11, 10149), (15, 10239), (17, 10281), (18, 10287), (20, 10350), (23, 10395), (24, 10404), (28, 10512),

Gene: Paedore_15 Start: 10057, Stop: 10797, Start Num: 6
Candidate Starts for Paedore_15:
(Start: 6 @10057 has 93 MA's), (9, 10171), (11, 10291), (17, 10423), (18, 10429), (19, 10444), (20, 10492), (23, 10537), (24, 10546), (34, 10732),

Gene: Paolo_17 Start: 10558, Stop: 11295, Start Num: 7
Candidate Starts for Paolo_17:
(2, 10390), (3, 10471), (Start: 7 @10558 has 3 MA's), (9, 10669), (13, 10855), (17, 10921), (18, 10927), (24, 11044), (34, 11230),

Gene: Phettuccine_15 Start: 10095, Stop: 10838, Start Num: 6
Candidate Starts for Phettuccine_15:
(Start: 6 @10095 has 93 MA's), (8, 10167), (11, 10329), (12, 10356), (14, 10413), (17, 10461), (18, 10467), (23, 10575), (24, 10584), (28, 10695),

Gene: Puginator_17 Start: 10516, Stop: 11253, Start Num: 7
Candidate Starts for Puginator_17:
(2, 10348), (3, 10429), (Start: 7 @10516 has 3 MA's), (9, 10627), (12, 10774), (18, 10885), (23, 10993), (24, 11002),

Gene: R4_15 Start: 10037, Stop: 10777, Start Num: 6
Candidate Starts for R4_15:
(Start: 6 @10037 has 93 MA's), (9, 10151), (11, 10271), (17, 10403), (18, 10409), (19, 10424), (20, 10472), (23, 10517), (24, 10526),

Gene: Rana_15 Start: 10054, Stop: 10806, Start Num: 6
Candidate Starts for Rana_15:
(Start: 6 @10054 has 93 MA's), (11, 10288), (12, 10315), (16, 10402), (18, 10426), (24, 10543), (25, 10597),

Gene: RedBear_17 Start: 10336, Stop: 11079, Start Num: 6
Candidate Starts for RedBear_17:
(Start: 6 @10336 has 93 MA's), (11, 10570), (12, 10597), (16, 10684), (17, 10702), (18, 10708), (20, 10771), (24, 10825), (27, 10882), (30, 10969),

Gene: Rusticus_16 Start: 10258, Stop: 11001, Start Num: 6
Candidate Starts for Rusticus_16:
(4, 10168), (Start: 6 @10258 has 93 MA's), (8, 10330), (11, 10492), (12, 10519), (17, 10624), (18, 10630), (23, 10738), (24, 10747), (28, 10858),

Gene: SarahRose_15 Start: 10060, Stop: 10812, Start Num: 6
Candidate Starts for SarahRose_15:
(3, 9964), (Start: 6 @10060 has 93 MA's), (11, 10294), (12, 10321), (16, 10408), (18, 10432), (24, 10549),

Gene: Snorlax_15 Start: 10060, Stop: 10815, Start Num: 6
Candidate Starts for Snorlax_15:
(3, 9964), (Start: 6 @10060 has 93 MA's), (11, 10294), (12, 10321), (16, 10408), (18, 10432), (24, 10549),

Gene: South40_16 Start: 10336, Stop: 11079, Start Num: 6
Candidate Starts for South40_16:
(Start: 6 @10336 has 93 MA's), (11, 10570), (12, 10597), (16, 10684), (17, 10702), (18, 10708), (20, 10771), (24, 10825), (27, 10882), (30, 10969),

Gene: SqueakyClean_16 Start: 10181, Stop: 10921, Start Num: 6
Candidate Starts for SqueakyClean_16:
(2, 10013), (Start: 6 @10181 has 93 MA's), (11, 10415), (20, 10616), (23, 10661), (24, 10670),

Gene: Sujidade_16 Start: 10358, Stop: 11113, Start Num: 6
Candidate Starts for Sujidade_16:
(Start: 6 @10358 has 93 MA's), (11, 10592), (12, 10619), (16, 10706), (18, 10730), (24, 10847), (25, 10901), (32, 11024),

Gene: SunsetPointe_15 Start: 10085, Stop: 10828, Start Num: 6
Candidate Starts for SunsetPointe_15:
(Start: 6 @10085 has 93 MA's), (8, 10157), (11, 10319), (12, 10346), (14, 10403), (17, 10451), (18, 10457), (23, 10565), (24, 10574), (28, 10685),

Gene: Superstar_18 Start: 11073, Stop: 11810, Start Num: 6
Candidate Starts for Superstar_18:
(Start: 6 @11073 has 93 MA's), (9, 11187), (11, 11307), (17, 11439), (18, 11445), (20, 11508), (23, 11553), (24, 11562), (29, 11694),

Gene: TagePhighter_16 Start: 10060, Stop: 10815, Start Num: 6
Candidate Starts for TagePhighter_16:
(3, 9964), (Start: 6 @10060 has 93 MA's), (11, 10294), (12, 10321), (16, 10408), (18, 10432), (24, 10549),

Gene: Tefunt_15 Start: 9945, Stop: 10685, Start Num: 6
Candidate Starts for Tefunt_15:
(Start: 6 @9945 has 93 MA's), (11, 10179), (13, 10245), (16, 10293), (17, 10311), (20, 10380), (23, 10425), (24, 10434), (29, 10566),

Gene: Thestral_16 Start: 10014, Stop: 10754, Start Num: 6
Candidate Starts for Thestral_16:
(Start: 6 @10014 has 93 MA's), (10, 10188), (11, 10248), (15, 10338), (18, 10386), (23, 10494), (24, 10503),

Gene: TinaBelcher_15 Start: 9962, Stop: 10702, Start Num: 6
Candidate Starts for TinaBelcher_15:
(Start: 6 @9962 has 93 MA's), (9, 10076), (11, 10196), (15, 10286), (18, 10334), (23, 10442), (24, 10451),

Gene: Toma_15 Start: 10066, Stop: 10818, Start Num: 6
Candidate Starts for Toma_15:
(Start: 6 @10066 has 93 MA's), (11, 10300), (12, 10327), (16, 10414), (18, 10438), (24, 10555),

Gene: Triste_15 Start: 10054, Stop: 10806, Start Num: 6
Candidate Starts for Triste_15:
(3, 9958), (Start: 6 @10054 has 93 MA's), (11, 10288), (12, 10315), (16, 10402), (18, 10426), (24, 10543),

Gene: Triumph_17 Start: 9970, Stop: 10710, Start Num: 6
Candidate Starts for Triumph_17:
(Start: 6 @9970 has 93 MA's), (11, 10204), (15, 10294), (17, 10336), (18, 10342), (20, 10405), (23, 10450), (24, 10459), (30, 10600),

Gene: TrvxScott_14 Start: 9963, Stop: 10703, Start Num: 6
Candidate Starts for TrvxScott_14:
(Start: 6 @9963 has 93 MA's), (9, 10077), (11, 10197), (15, 10287), (18, 10335), (23, 10443), (24, 10452),

Gene: TuanPN_15 Start: 10063, Stop: 10815, Start Num: 6
Candidate Starts for TuanPN_15:
(3, 9967), (Start: 6 @10063 has 93 MA's), (11, 10297), (12, 10324), (16, 10411), (18, 10435), (24, 10552),

Gene: Unstoppable_15 Start: 10086, Stop: 10829, Start Num: 6
Candidate Starts for Unstoppable_15:
(Start: 6 @10086 has 93 MA's), (8, 10158), (11, 10320), (12, 10347), (14, 10404), (17, 10452), (18, 10458), (23, 10566), (24, 10575), (28, 10686),

Gene: Urza_15 Start: 10316, Stop: 11068, Start Num: 6
Candidate Starts for Urza_15:
(Start: 6 @10316 has 93 MA's), (11, 10550), (20, 10751), (23, 10796), (24, 10805), (31, 10958),

Gene: Verse_15 Start: 10256, Stop: 10999, Start Num: 6
Candidate Starts for Verse_15:
(Start: 6 @10256 has 93 MA's), (11, 10490), (18, 10628), (23, 10736), (24, 10745),

Gene: VieEnRose_15 Start: 10386, Stop: 11135, Start Num: 6
Candidate Starts for VieEnRose_15:
(1, 10017), (Start: 6 @10386 has 93 MA's), (11, 10620), (20, 10821), (23, 10866), (24, 10875), (31, 11028),

Gene: Werner_15 Start: 10061, Stop: 10816, Start Num: 6
Candidate Starts for Werner_15:
(3, 9965), (Start: 6 @10061 has 93 MA's), (11, 10295), (12, 10322), (16, 10409), (18, 10433), (24, 10550),

Gene: Whatever_15 Start: 10061, Stop: 10816, Start Num: 6
Candidate Starts for Whatever_15:
(3, 9965), (Start: 6 @10061 has 93 MA's), (11, 10295), (12, 10322), (16, 10409), (18, 10433), (24, 10550),

Gene: Yasdnil_15 Start: 10059, Stop: 10811, Start Num: 6
Candidate Starts for Yasdnil_15:
(3, 9963), (Start: 6 @10059 has 93 MA's), (11, 10293), (12, 10320), (16, 10407), (18, 10431), (24, 10548),

Gene: Zainub_17 Start: 10516, Stop: 11253, Start Num: 7
Candidate Starts for Zainub_17:
(2, 10348), (3, 10429), (Start: 7 @10516 has 3 MA's), (9, 10627), (13, 10813), (17, 10879), (18, 10885), (24, 11002), (34, 11188),

Gene: Zemlya_16 Start: 10074, Stop: 10829, Start Num: 6
Candidate Starts for Zemlya_16:
(Start: 6 @10074 has 93 MA's), (11, 10308), (12, 10335), (16, 10422), (18, 10446), (24, 10563), (25, 10617),

Gene: phiHau3_17 Start: 10244, Stop: 10984, Start Num: 6
Candidate Starts for phiHau3_17:
(Start: 6 @10244 has 93 MA's), (11, 10478), (12, 10505), (14, 10562), (18, 10616), (23, 10724), (24, 10733), (26, 10787), (30, 10874),