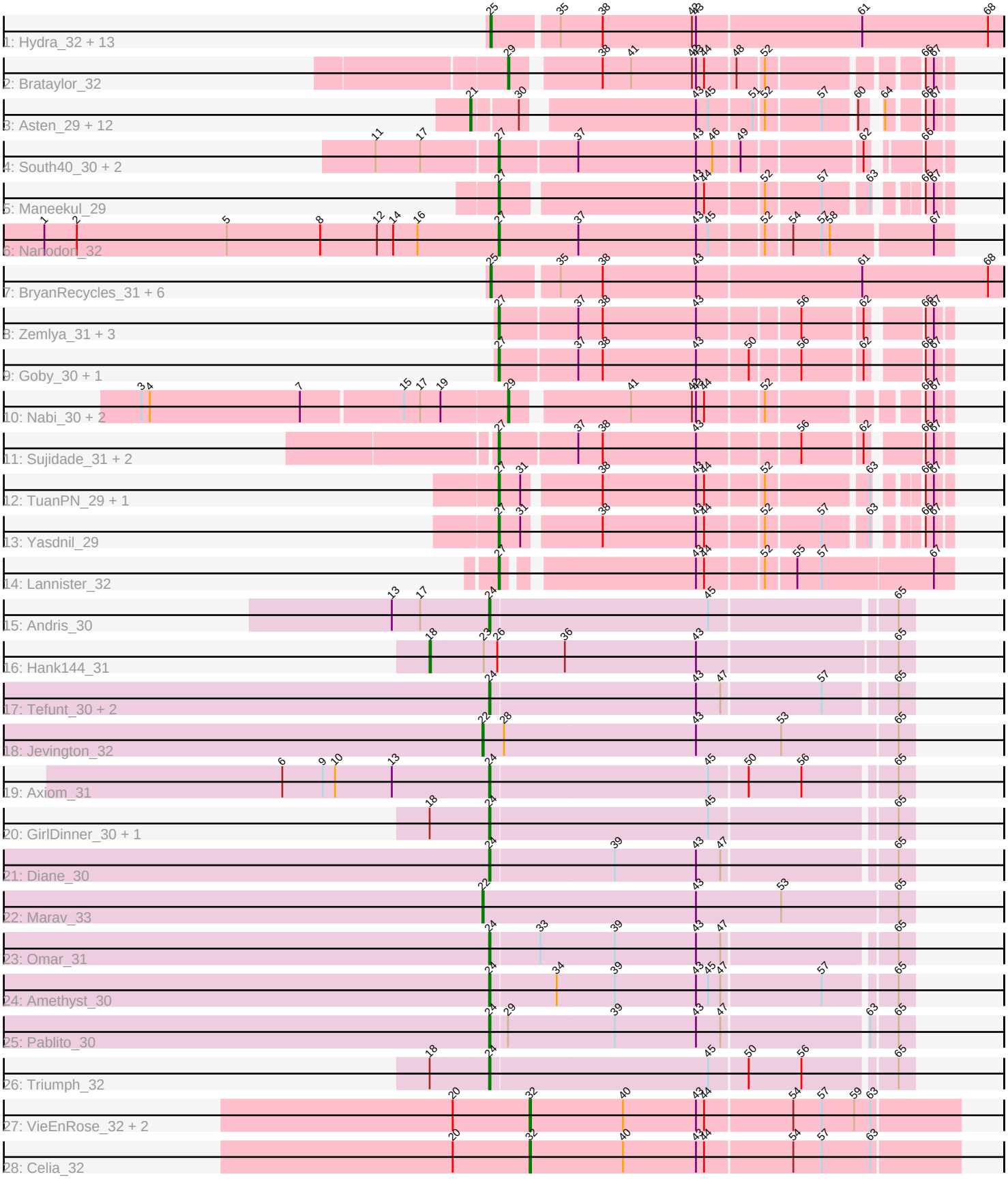
Pham 342089


1: Hydra_32 + 13
2: Brataylor_32
3: Asten_29 + 12
4: South40_30 + 2
5: Maneekul_29
6: Nandodon_32
7: BryanRecycles_31 + 6
8: Zemlya_31 + 3
9: Goby_30 + 1
10: Nabi_30 + 2
11: Sujidade_31 + 2
12: TuanPN_29 + 1
13: Yasdnil_29
14: Lannister_32
15: Andris_30
16: Hank144_31
17: Tefunt_30 + 2
18: Jevington_32
19: Axiom_31
20: GirlDinner_30 + 1
21: Diane_30
22: Marav_33
23: Omar_31
24: Amethyst_30
25: Pablito_30
26: Triumph_32
27: VieEnRose_32 + 2
28: Celia_32

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 342089 Report

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

Pham number 342089 has 75 members, 1 are drafts.

Phages represented in each track:
• Track 1 : Hydra_32, Esperer_30, Bovely_30, Legacy_30, BeardedLady_31, Nerdos_30, Aaronocolus_30, Caliburn_30, Ozzie_30, Leviticus_30, Indigo_29, SunsetPointe_30, Unstoppable_30, Phettuccine_30
• Track 2 : Brataylor_32
• Track 3 : Asten_29, Dwayne_29, BarryBee_31, Hippo_29, Emaanora_31, Werner_29, OzzyJ_30, Triste_29, TagePhighter_30, SarahRose_29, Snorlax_29, Chucky_29, Whatever_29
• Track 4 : South40_30, Katalie_30, RedBear_31
• Track 5 : Maneekul_29
• Track 6 : Nanodon_32
• Track 7 : BryanRecycles_31, Eddasa_31, EnochSoames_33, Izzy_31, Oliynyk_31, Jash_31, Rusticus_31
• Track 8 : Zemlya_31, Dattran_31, Celeste_30, Danzina_31
• Track 9 : Goby_30, Toma_30
• Track 10 : Nabi_30, Lorelei_30, Rana_30
• Track 11 : Sujidade_31, Godpower_31, Lika_30
• Track 12 : TuanPN_29, Ejemplo_29
• Track 13 : Yasdnil_29
• Track 14 : Lannister_32
• Track 15 : Andris_30
• Track 16 : Hank144_31
• Track 17 : Tefunt_30, Nishikigoi_30, Haizum_30
• Track 18 : Jevington_32
• Track 19 : Axiom_31
• Track 20 : GirlDinner_30, Janus_31
• Track 21 : Diane_30
• Track 22 : Marav_33
• Track 23 : Omar_31
• Track 24 : Amethyst_30
• Track 25 : Pablito_30
• Track 26 : Triumph_32
• Track 27 : VieEnRose_32, Urza_32, Itza_32
• Track 28 : Celia_32

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

The start number called the most often in the published annotations is 25, it was called in 20 of the 74 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aaronocolus_30, BeardedLady_31, Bovely_30, BryanRecycles_31, Caliburn_30, Eddasa_31, EnochSoames_33, Esperer_30, Hydra_32, Indigo_29, Izzy_31, Jash_31, Legacy_30, Leviticus_30, Nerdos_30, Oliynyk_31, Ozzie_30, Phettuccine_30, Rusticus_31, SunsetPointe_30, Unstoppable_30,

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

Genes that do not have the "Most Annotated" start:
• Amethyst_30, Andris_30, Asten_29, Axiom_31, BarryBee_31, Brataylor_32, Celeste_30, Celia_32, Chucky_29, Danzina_31, Dattran_31, Diane_30, Dwayne_29, Ejemplo_29, Emaanora_31, GirlDinner_30, Goby_30, Godpower_31, Haizum_30, Hank144_31, Hippo_29, Itza_32, Janus_31, Jevington_32, Katalie_30, Lannister_32, Lika_30, Lorelei_30, Maneekul_29, Marav_33, Nabi_30, Nanodon_32, Nishikigoi_30, Omar_31, OzzyJ_30, Pablito_30, Rana_30, RedBear_31, SarahRose_29, Snorlax_29, South40_30, Sujidade_31, TagePhighter_30, Tefunt_30, Toma_30, Triste_29, Triumph_32, TuanPN_29, Urza_32, VieEnRose_32, Werner_29, Whatever_29, Yasdnil_29, Zemlya_31,

Summary by start number:

Start 18:
• Found in 4 of 75 (5.3%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 25.0% of time when present
• Phage (with cluster) where this start called: Hank144_31 (BD2),

Start 21:
• Found in 13 of 75 (17.3%) of genes in pham
• Manual Annotations of this start: 13 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Asten_29 (BD1), BarryBee_31 (BD1), Chucky_29 (BD1), Dwayne_29 (BD1), Emaanora_31 (BD1), Hippo_29 (BD1), OzzyJ_30 (BD1), SarahRose_29 (BD1), Snorlax_29 (BD1), TagePhighter_30 (BD1), Triste_29 (BD1), Werner_29 (BD1), Whatever_29 (BD1),

Start 22:
• Found in 2 of 75 (2.7%) of genes in pham
• Manual Annotations of this start: 2 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Jevington_32 (BD2), Marav_33 (BD2),

Start 24:
• Found in 12 of 75 (16.0%) of genes in pham
• Manual Annotations of this start: 12 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amethyst_30 (BD2), Andris_30 (BD2), Axiom_31 (BD2), Diane_30 (BD2), GirlDinner_30 (BD2), Haizum_30 (BD2), Janus_31

(BD2), Nishikigoi_30 (BD2), Omar_31 (BD2), Pablito_30 (BD2), Tefunt_30 (BD2), Triumph_32 (BD2),

Start 25:
• Found in 21 of 75 (28.0%) of genes in pham
• Manual Annotations of this start: 20 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aaronocolus_30 (BD1), BeardedLady_31 (BD1), Bovely_30 (BD1), BryanRecycles_31 (BD1), Caliburn_30 (BD1), Eddasa_31 (BD1), EnochSoames_33 (BD1), Esperer_30 (BD1), Hydra_32 (BD1), Indigo_29 (BD1), Izzy_31 (BD1), Jash_31 (BD1), Legacy_30 (BD1), Leviticus_30 (BD1), Nerdos_30 (BD1), Oliynyk_31 (BD1), Ozzie_30 (BD1), Phettuccine_30 (BD1), Rusticus_31 (BD1), SunsetPointe_30 (BD1), Unstoppable_30 (BD1),

Start 27:
• Found in 18 of 75 (24.0%) of genes in pham
• Manual Annotations of this start: 18 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Celeste_30 (BD1), Danzina_31 (BD1), Dattran_31 (BD1), Ejemplo_29 (BD1), Goby_30 (BD1), Godpower_31 (BD1), Katalie_30 (BD1), Lannister_32 (BD1), Lika_30 (BD1), Maneekul_29 (BD1), Nanodon_32 (BD1), RedBear_31 (BD1), South40_30 (BD1), Sujidade_31 (BD1), Toma_30 (BD1), TuanPN_29 (BD1), Yasdnil_29 (BD1), Zemlya_31 (BD1),

Start 29:
• Found in 5 of 75 (6.7%) of genes in pham
• Manual Annotations of this start: 4 of 74
• Called 80.0% of time when present
• Phage (with cluster) where this start called: Brataylor_32 (BD1), Lorelei_30 (BD1), Nabi_30 (BD1), Rana_30 (BD1),

Start 32:
• Found in 4 of 75 (5.3%) of genes in pham
• Manual Annotations of this start: 4 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Celia_32 (BD6), Itza_32 (BD6), Urza_32 (BD6), VieEnRose_32 (BD6),

Summary by clusters:

There are 3 clusters represented in this pham: BD6, BD1, BD2,

Info for manual annotations of cluster BD1:
•Start number 21 was manually annotated 13 times for cluster BD1.
•Start number 25 was manually annotated 20 times for cluster BD1.
•Start number 27 was manually annotated 18 times for cluster BD1.
•Start number 29 was manually annotated 4 times for cluster BD1.

Info for manual annotations of cluster BD2:
•Start number 18 was manually annotated 1 time for cluster BD2.
•Start number 22 was manually annotated 2 times for cluster BD2.
•Start number 24 was manually annotated 12 times for cluster BD2.

Info for manual annotations of cluster BD6:
•Start number 32 was manually annotated 4 times for cluster BD6.

Gene Information:

Gene: Aaronocolus_30 Start: 23162, Stop: 23530, Start Num: 25
Candidate Starts for Aaronocolus_30:
(Start: 25 @23162 has 20 MA's), (35, 23207), (38, 23237), (42, 23303), (43, 23306), (61, 23426), (68, 23519),

Gene: Amethyst_30 Start: 23945, Stop: 24244, Start Num: 24
Candidate Starts for Amethyst_30:
(Start: 24 @23945 has 12 MA's), (34, 23993), (39, 24035), (43, 24095), (45, 24104), (47, 24113), (57, 24185), (65, 24233),

Gene: Andris_30 Start: 23975, Stop: 24274, Start Num: 24
Candidate Starts for Andris_30:
(13, 23903), (17, 23924), (Start: 24 @23975 has 12 MA's), (45, 24134), (65, 24263),

Gene: Asten_29 Start: 23467, Stop: 23763, Start Num: 21
Candidate Starts for Asten_29:
(Start: 21 @23467 has 13 MA's), (30, 23497), (43, 23611), (45, 23620), (51, 23650), (52, 23656), (57, 23695), (60, 23716), (64, 23725), (66, 23746), (67, 23752),

Gene: Axiom_31 Start: 24146, Stop: 24445, Start Num: 24
Candidate Starts for Axiom_31:
(6, 23996), (9, 24026), (10, 24035), (13, 24077), (Start: 24 @24146 has 12 MA's), (45, 24305), (50, 24332), (56, 24371), (65, 24434),

Gene: BarryBee_31 Start: 23477, Stop: 23773, Start Num: 21
Candidate Starts for BarryBee_31:
(Start: 21 @23477 has 13 MA's), (30, 23507), (43, 23621), (45, 23630), (51, 23660), (52, 23666), (57, 23705), (60, 23726), (64, 23735), (66, 23756), (67, 23762),

Gene: BeardedLady_31 Start: 23415, Stop: 23783, Start Num: 25
Candidate Starts for BeardedLady_31:
(Start: 25 @23415 has 20 MA's), (35, 23460), (38, 23490), (42, 23556), (43, 23559), (61, 23679), (68, 23772),

Gene: Bovely_30 Start: 23168, Stop: 23536, Start Num: 25
Candidate Starts for Bovely_30:
(Start: 25 @23168 has 20 MA's), (35, 23213), (38, 23243), (42, 23309), (43, 23312), (61, 23432), (68, 23525),

Gene: Brataylor_32 Start: 24443, Stop: 24727, Start Num: 29
Candidate Starts for Brataylor_32:
(Start: 29 @24443 has 4 MA's), (38, 24500), (41, 24521), (42, 24566), (43, 24569), (44, 24575), (48, 24596), (52, 24614), (66, 24710), (67, 24716),

Gene: BryanRecycles_31 Start: 23519, Stop: 23887, Start Num: 25

Candidate Starts for BryanRecycles_31:
(Start: 25 @23519 has 20 MA's), (35, 23564), (38, 23594), (43, 23663), (61, 23783), (68, 23876),

Gene: Caliburn_30 Start: 23145, Stop: 23513, Start Num: 25
Candidate Starts for Caliburn_30:
(Start: 25 @23145 has 20 MA's), (35, 23190), (38, 23220), (42, 23286), (43, 23289), (61, 23409), (68, 23502),

Gene: Celeste_30 Start: 23894, Stop: 24196, Start Num: 27
Candidate Starts for Celeste_30:
(Start: 27 @23894 has 18 MA's), (37, 23948), (38, 23966), (43, 24035), (56, 24104), (62, 24146), (66, 24179), (67, 24185),

Gene: Celia_32 Start: 24298, Stop: 24609, Start Num: 32
Candidate Starts for Celia_32:
(20, 24241), (Start: 32 @24298 has 4 MA's), (40, 24367), (43, 24421), (44, 24427), (54, 24490), (57, 24511), (63, 24547),

Gene: Chucky_29 Start: 23481, Stop: 23777, Start Num: 21
Candidate Starts for Chucky_29:
(Start: 21 @23481 has 13 MA's), (30, 23511), (43, 23625), (45, 23634), (51, 23664), (52, 23670), (57, 23709), (60, 23730), (64, 23739), (66, 23760), (67, 23766),

Gene: Danzina_31 Start: 24195, Stop: 24497, Start Num: 27
Candidate Starts for Danzina_31:
(Start: 27 @24195 has 18 MA's), (37, 24249), (38, 24267), (43, 24336), (56, 24405), (62, 24447), (66, 24480), (67, 24486),

Gene: Dattran_31 Start: 24001, Stop: 24303, Start Num: 27
Candidate Starts for Dattran_31:
(Start: 27 @24001 has 18 MA's), (37, 24055), (38, 24073), (43, 24142), (56, 24211), (62, 24253), (66, 24286), (67, 24292),

Gene: Diane_30 Start: 24288, Stop: 24587, Start Num: 24
Candidate Starts for Diane_30:
(Start: 24 @24288 has 12 MA's), (39, 24378), (43, 24438), (47, 24456), (65, 24576),

Gene: Dwayne_29 Start: 23468, Stop: 23764, Start Num: 21
Candidate Starts for Dwayne_29:
(Start: 21 @23468 has 13 MA's), (30, 23498), (43, 23612), (45, 23621), (51, 23651), (52, 23657), (57, 23696), (60, 23717), (64, 23726), (66, 23747), (67, 23753),

Gene: Eddasa_31 Start: 23519, Stop: 23887, Start Num: 25
Candidate Starts for Eddasa_31:
(Start: 25 @23519 has 20 MA's), (35, 23564), (38, 23594), (43, 23663), (61, 23783), (68, 23876),

Gene: Ejemplo_29 Start: 23530, Stop: 23817, Start Num: 27
Candidate Starts for Ejemplo_29:
(Start: 27 @23530 has 18 MA's), (31, 23545), (38, 23596), (43, 23665), (44, 23671), (52, 23710), (63, 23779), (66, 23800), (67, 23806),

Gene: Emaanora_31 Start: 23426, Stop: 23722, Start Num: 21
Candidate Starts for Emaanora_31:

(Start: 21 @23426 has 13 MA's), (30, 23456), (43, 23570), (45, 23579), (51, 23609), (52, 23615), (57, 23654), (60, 23675), (64, 23684), (66, 23705), (67, 23711),

Gene: EnochSoames_33 Start: 23514, Stop: 23882, Start Num: 25
Candidate Starts for EnochSoames_33:
(Start: 25 @23514 has 20 MA's), (35, 23559), (38, 23589), (43, 23658), (61, 23778), (68, 23871),

Gene: Esperer_30 Start: 22981, Stop: 23349, Start Num: 25
Candidate Starts for Esperer_30:
(Start: 25 @22981 has 20 MA's), (35, 23026), (38, 23056), (42, 23122), (43, 23125), (61, 23245), (68, 23338),

Gene: GirlDinner_30 Start: 23927, Stop: 24226, Start Num: 24
Candidate Starts for GirlDinner_30:
(Start: 18 @23885 has 1 MA's), (Start: 24 @23927 has 12 MA's), (45, 24086), (65, 24215),

Gene: Goby_30 Start: 24022, Stop: 24324, Start Num: 27
Candidate Starts for Goby_30:
(Start: 27 @24022 has 18 MA's), (37, 24076), (38, 24094), (43, 24163), (50, 24199), (56, 24232), (62, 24274), (66, 24307), (67, 24313),

Gene: Godpower_31 Start: 24016, Stop: 24318, Start Num: 27
Candidate Starts for Godpower_31:
(Start: 27 @24016 has 18 MA's), (37, 24070), (38, 24088), (43, 24157), (56, 24226), (62, 24268), (66, 24301), (67, 24307),

Gene: Haizum_30 Start: 23962, Stop: 24261, Start Num: 24
Candidate Starts for Haizum_30:
(Start: 24 @23962 has 12 MA's), (43, 24112), (47, 24130), (57, 24202), (65, 24250),

Gene: Hank144_31 Start: 24298, Stop: 24642, Start Num: 18
Candidate Starts for Hank144_31:
(Start: 18 @24298 has 1 MA's), (23, 24337), (26, 24346), (36, 24394), (43, 24490), (65, 24631),

Gene: Hippo_29 Start: 23477, Stop: 23773, Start Num: 21
Candidate Starts for Hippo_29:
(Start: 21 @23477 has 13 MA's), (30, 23507), (43, 23621), (45, 23630), (51, 23660), (52, 23666), (57, 23705), (60, 23726), (64, 23735), (66, 23756), (67, 23762),

Gene: Hydra_32 Start: 23693, Stop: 24061, Start Num: 25
Candidate Starts for Hydra_32:
(Start: 25 @23693 has 20 MA's), (35, 23738), (38, 23768), (42, 23834), (43, 23837), (61, 23957), (68, 24050),

Gene: Indigo_29 Start: 23161, Stop: 23529, Start Num: 25
Candidate Starts for Indigo_29:
(Start: 25 @23161 has 20 MA's), (35, 23206), (38, 23236), (42, 23302), (43, 23305), (61, 23425), (68, 23518),

Gene: Itza_32 Start: 24212, Stop: 24523, Start Num: 32
Candidate Starts for Itza_32:
(20, 24155), (Start: 32 @24212 has 4 MA's), (40, 24281), (43, 24335), (44, 24341), (54, 24404), (57, 24425), (59, 24449), (63, 24461),

Gene: Izzy_31 Start: 23566, Stop: 23934, Start Num: 25
Candidate Starts for Izzy_31:
(Start: 25 @23566 has 20 MA's), (35, 23611), (38, 23641), (43, 23710), (61, 23830), (68, 23923),

Gene: Janus_31 Start: 24265, Stop: 24564, Start Num: 24
Candidate Starts for Janus_31:
(Start: 18 @24223 has 1 MA's), (Start: 24 @24265 has 12 MA's), (45, 24424), (65, 24553),

Gene: Jash_31 Start: 23519, Stop: 23887, Start Num: 25
Candidate Starts for Jash_31:
(Start: 25 @23519 has 20 MA's), (35, 23564), (38, 23594), (43, 23663), (61, 23783), (68, 23876),

Gene: Jevington_32 Start: 24613, Stop: 24927, Start Num: 22
Candidate Starts for Jevington_32:
(Start: 22 @24613 has 2 MA's), (28, 24628), (43, 24769), (53, 24832), (65, 24916),

Gene: Katalie_30 Start: 23761, Stop: 24060, Start Num: 27
Candidate Starts for Katalie_30:
(11, 23674), (17, 23707), (Start: 27 @23761 has 18 MA's), (37, 23815), (43, 23902), (46, 23914), (49, 23932), (62, 24013), (66, 24043),

Gene: Lannister_32 Start: 24234, Stop: 24539, Start Num: 27
Candidate Starts for Lannister_32:
(Start: 27 @24234 has 18 MA's), (43, 24360), (44, 24366), (52, 24405), (55, 24426), (57, 24444), (67, 24525),

Gene: Legacy_30 Start: 23136, Stop: 23504, Start Num: 25
Candidate Starts for Legacy_30:
(Start: 25 @23136 has 20 MA's), (35, 23181), (38, 23211), (42, 23277), (43, 23280), (61, 23400), (68, 23493),

Gene: Leviticus_30 Start: 23165, Stop: 23533, Start Num: 25
Candidate Starts for Leviticus_30:
(Start: 25 @23165 has 20 MA's), (35, 23210), (38, 23240), (42, 23306), (43, 23309), (61, 23429), (68, 23522),

Gene: Lika_30 Start: 24020, Stop: 24322, Start Num: 27
Candidate Starts for Lika_30:
(Start: 27 @24020 has 18 MA's), (37, 24074), (38, 24092), (43, 24161), (56, 24230), (62, 24272), (66, 24305), (67, 24311),

Gene: Lorelei_30 Start: 23978, Stop: 24262, Start Num: 29
Candidate Starts for Lorelei_30:
(3, 23717), (4, 23723), (7, 23834), (15, 23906), (17, 23918), (19, 23933), (Start: 29 @23978 has 4 MA's), (41, 24056), (42, 24101), (43, 24104), (44, 24110), (52, 24149), (66, 24245), (67, 24251),

Gene: Maneekul_29 Start: 23501, Stop: 23788, Start Num: 27
Candidate Starts for Maneekul_29:
(Start: 27 @23501 has 18 MA's), (43, 23636), (44, 23642), (52, 23681), (57, 23720), (63, 23750), (66, 23771), (67, 23777),

Gene: Marav_33 Start: 24943, Stop: 25257, Start Num: 22

Candidate Starts for Marav_33:
(Start: 22 @24943 has 2 MA's), (43, 25099), (53, 25162), (65, 25246),

Gene: Nabi_30 Start: 23978, Stop: 24262, Start Num: 29
Candidate Starts for Nabi_30:
(3, 23717), (4, 23723), (7, 23834), (15, 23906), (17, 23918), (19, 23933), (Start: 29 @23978 has 4 MA's), (41, 24056), (42, 24101), (43, 24104), (44, 24110), (52, 24149), (66, 24245), (67, 24251),

Gene: Nanodon_32 Start: 23831, Stop: 24151, Start Num: 27
Candidate Starts for Nanodon_32:
(1, 23495), (2, 23519), (5, 23630), (8, 23699), (12, 23741), (14, 23753), (16, 23771), (Start: 27 @23831 has 18 MA's), (37, 23888), (43, 23975), (45, 23984), (52, 24020), (54, 24038), (57, 24059), (58, 24065), (67, 24137),

Gene: Nerdos_30 Start: 23159, Stop: 23527, Start Num: 25
Candidate Starts for Nerdos_30:
(Start: 25 @23159 has 20 MA's), (35, 23204), (38, 23234), (42, 23300), (43, 23303), (61, 23423), (68, 23516),

Gene: Nishikigoi_30 Start: 23962, Stop: 24261, Start Num: 24
Candidate Starts for Nishikigoi_30:
(Start: 24 @23962 has 12 MA's), (43, 24112), (47, 24130), (57, 24202), (65, 24250),

Gene: Oliynyk_31 Start: 23519, Stop: 23887, Start Num: 25
Candidate Starts for Oliynyk_31:
(Start: 25 @23519 has 20 MA's), (35, 23564), (38, 23594), (43, 23663), (61, 23783), (68, 23876),

Gene: Omar_31 Start: 24224, Stop: 24523, Start Num: 24
Candidate Starts for Omar_31:
(Start: 24 @24224 has 12 MA's), (33, 24260), (39, 24314), (43, 24374), (47, 24392), (65, 24512),

Gene: Ozzie_30 Start: 23145, Stop: 23513, Start Num: 25
Candidate Starts for Ozzie_30:
(Start: 25 @23145 has 20 MA's), (35, 23190), (38, 23220), (42, 23286), (43, 23289), (61, 23409), (68, 23502),

Gene: OzzyJ_30 Start: 23468, Stop: 23764, Start Num: 21
Candidate Starts for OzzyJ_30:
(Start: 21 @23468 has 13 MA's), (30, 23498), (43, 23612), (45, 23621), (51, 23651), (52, 23657), (57, 23696), (60, 23717), (64, 23726), (66, 23747), (67, 23753),

Gene: Pablito_30 Start: 23843, Stop: 24142, Start Num: 24
Candidate Starts for Pablito_30:
(Start: 24 @23843 has 12 MA's), (Start: 29 @23855 has 4 MA's), (39, 23933), (43, 23993), (47, 24011), (63, 24113), (65, 24131),

Gene: Phettuccine_30 Start: 23161, Stop: 23529, Start Num: 25
Candidate Starts for Phettuccine_30:
(Start: 25 @23161 has 20 MA's), (35, 23206), (38, 23236), (42, 23302), (43, 23305), (61, 23425), (68, 23518),

Gene: Rana_30 Start: 23978, Stop: 24262, Start Num: 29
Candidate Starts for Rana_30:

(3, 23717), (4, 23723), (7, 23834), (15, 23906), (17, 23918), (19, 23933), (Start: 29 @23978 has 4 MA's), (41, 24056), (42, 24101), (43, 24104), (44, 24110), (52, 24149), (66, 24245), (67, 24251),

Gene: RedBear_31 Start: 23761, Stop: 24060, Start Num: 27
Candidate Starts for RedBear_31:
(11, 23674), (17, 23707), (Start: 27 @23761 has 18 MA's), (37, 23815), (43, 23902), (46, 23914), (49, 23932), (62, 24013), (66, 24043),

Gene: Rusticus_31 Start: 23519, Stop: 23887, Start Num: 25
Candidate Starts for Rusticus_31:
(Start: 25 @23519 has 20 MA's), (35, 23564), (38, 23594), (43, 23663), (61, 23783), (68, 23876),

Gene: SarahRose_29 Start: 23477, Stop: 23773, Start Num: 21
Candidate Starts for SarahRose_29:
(Start: 21 @23477 has 13 MA's), (30, 23507), (43, 23621), (45, 23630), (51, 23660), (52, 23666), (57, 23705), (60, 23726), (64, 23735), (66, 23756), (67, 23762),

Gene: Snorlax_29 Start: 23480, Stop: 23776, Start Num: 21
Candidate Starts for Snorlax_29:
(Start: 21 @23480 has 13 MA's), (30, 23510), (43, 23624), (45, 23633), (51, 23663), (52, 23669), (57, 23708), (60, 23729), (64, 23738), (66, 23759), (67, 23765),

Gene: South40_30 Start: 23761, Stop: 24060, Start Num: 27
Candidate Starts for South40_30:
(11, 23674), (17, 23707), (Start: 27 @23761 has 18 MA's), (37, 23815), (43, 23902), (46, 23914), (49, 23932), (62, 24013), (66, 24043),

Gene: Sujidade_31 Start: 24305, Stop: 24607, Start Num: 27
Candidate Starts for Sujidade_31:
(Start: 27 @24305 has 18 MA's), (37, 24359), (38, 24377), (43, 24446), (56, 24515), (62, 24557), (66, 24590), (67, 24596),

Gene: SunsetPointe_30 Start: 23152, Stop: 23520, Start Num: 25
Candidate Starts for SunsetPointe_30:
(Start: 25 @23152 has 20 MA's), (35, 23197), (38, 23227), (42, 23293), (43, 23296), (61, 23416), (68, 23509),

Gene: TagePhighter_30 Start: 23480, Stop: 23776, Start Num: 21
Candidate Starts for TagePhighter_30:
(Start: 21 @23480 has 13 MA's), (30, 23510), (43, 23624), (45, 23633), (51, 23663), (52, 23669), (57, 23708), (60, 23729), (64, 23738), (66, 23759), (67, 23765),

Gene: Tefunt_30 Start: 23965, Stop: 24264, Start Num: 24
Candidate Starts for Tefunt_30:
(Start: 24 @23965 has 12 MA's), (43, 24115), (47, 24133), (57, 24205), (65, 24253),

Gene: Toma_30 Start: 24022, Stop: 24324, Start Num: 27
Candidate Starts for Toma_30:
(Start: 27 @24022 has 18 MA's), (37, 24076), (38, 24094), (43, 24163), (50, 24199), (56, 24232), (62, 24274), (66, 24307), (67, 24313),

Gene: Triste_29 Start: 23468, Stop: 23764, Start Num: 21
Candidate Starts for Triste_29:

(Start: 21 @23468 has 13 MA's), (30, 23498), (43, 23612), (45, 23621), (51, 23651), (52, 23657), (57, 23696), (60, 23717), (64, 23726), (66, 23747), (67, 23753),

Gene: Triumph_32 Start: 24163, Stop: 24462, Start Num: 24
Candidate Starts for Triumph_32:
(Start: 18 @24121 has 1 MA's), (Start: 24 @24163 has 12 MA's), (45, 24322), (50, 24349), (56, 24388), (65, 24451),

Gene: TuanPN_29 Start: 23530, Stop: 23817, Start Num: 27
Candidate Starts for TuanPN_29:
(Start: 27 @23530 has 18 MA's), (31, 23545), (38, 23596), (43, 23665), (44, 23671), (52, 23710), (63, 23779), (66, 23800), (67, 23806),

Gene: Unstoppable_30 Start: 23156, Stop: 23524, Start Num: 25
Candidate Starts for Unstoppable_30:
(Start: 25 @23156 has 20 MA's), (35, 23201), (38, 23231), (42, 23297), (43, 23300), (61, 23420), (68, 23513),

Gene: Urza_32 Start: 24233, Stop: 24544, Start Num: 32
Candidate Starts for Urza_32:
(20, 24176), (Start: 32 @24233 has 4 MA's), (40, 24302), (43, 24356), (44, 24362), (54, 24425), (57, 24446), (59, 24470), (63, 24482),

Gene: VieEnRose_32 Start: 24310, Stop: 24621, Start Num: 32
Candidate Starts for VieEnRose_32:
(20, 24253), (Start: 32 @24310 has 4 MA's), (40, 24379), (43, 24433), (44, 24439), (54, 24502), (57, 24523), (59, 24547), (63, 24559),

Gene: Werner_29 Start: 23478, Stop: 23774, Start Num: 21
Candidate Starts for Werner_29:
(Start: 21 @23478 has 13 MA's), (30, 23508), (43, 23622), (45, 23631), (51, 23661), (52, 23667), (57, 23706), (60, 23727), (64, 23736), (66, 23757), (67, 23763),

Gene: Whatever_29 Start: 23478, Stop: 23774, Start Num: 21
Candidate Starts for Whatever_29:
(Start: 21 @23478 has 13 MA's), (30, 23508), (43, 23622), (45, 23631), (51, 23661), (52, 23667), (57, 23706), (60, 23727), (64, 23736), (66, 23757), (67, 23763),

Gene: Yasdnil_29 Start: 23529, Stop: 23816, Start Num: 27
Candidate Starts for Yasdnil_29:
(Start: 27 @23529 has 18 MA's), (31, 23544), (38, 23595), (43, 23664), (44, 23670), (52, 23709), (57, 23748), (63, 23778), (66, 23799), (67, 23805),

Gene: Zemlya_31 Start: 24001, Stop: 24303, Start Num: 27
Candidate Starts for Zemlya_31:
(Start: 27 @24001 has 18 MA's), (37, 24055), (38, 24073), (43, 24142), (56, 24211), (62, 24253), (66, 24286), (67, 24292),