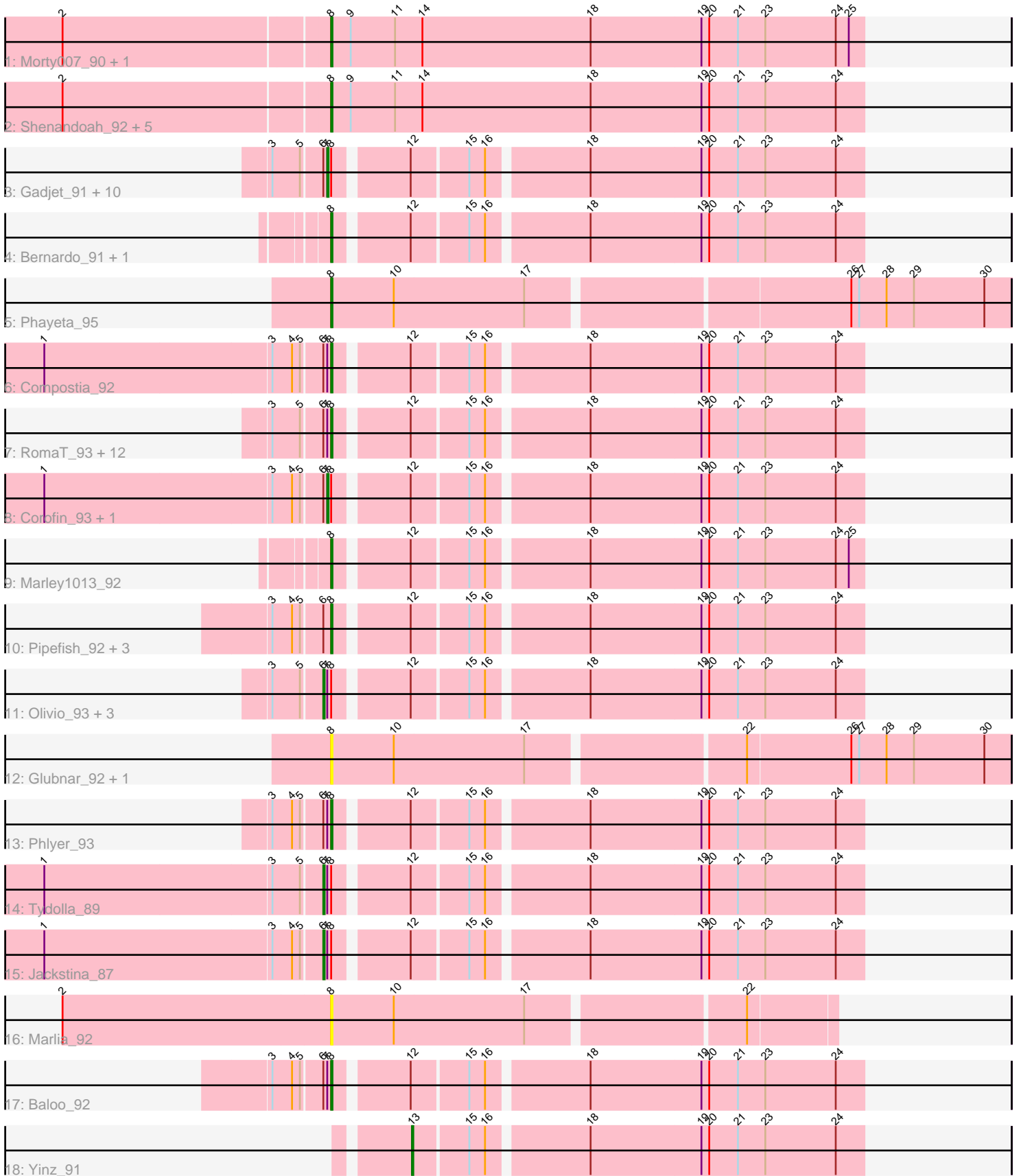


Pham 221478



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 221478 Report

This analysis was run 03/28/25 on database version 593.

Pham number 221478 has 55 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Morty007\_90, Neos5\_91
- Track 2 : Shenandoah\_92, Deenasa\_93, RagingRooster\_92, Chalmers\_92, Briakila\_93, SynergyX\_93
- Track 3 : Gadjet\_91, Ben11\_93, Chentzyk\_95, Chandler\_93, Kamiyu\_93, Kronus\_93, GlenHope\_94, Yahalom\_91, Mortcellus\_93, Athena\_95, HarveySr\_90
- Track 4 : Bernardo\_91, Akoma\_93
- Track 5 : Phayeta\_95
- Track 6 : Compostia\_92
- Track 7 : RomaT\_93, Daisy\_92, Nozo\_93, Gervas\_94, Casbah\_93, Abinghost\_93, Halfpint\_92, Phaedrus\_88, ChaChing\_93, Obutu\_95, Devonte\_91, LestyG\_91, MmasiCarm\_94
- Track 8 : Corofin\_93, Philly\_92
- Track 9 : Marley1013\_92
- Track 10 : Pipefish\_92, SlippinJimmy\_96, Audrey\_93, Rita1961\_94
- Track 11 : Olivio\_93, TinyTerror\_94, Heathcliff\_93, OrangeOswald\_92
- Track 12 : Glubnar\_92, SwainyDoc\_93
- Track 13 : Phlyer\_93
- Track 14 : Tydolla\_89
- Track 15 : Jackstina\_87
- Track 16 : Marlia\_92
- Track 17 : Baloo\_92
- Track 18 : Yinz\_91

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

The start number called the most often in the published annotations is 8, it was called in 29 of the 45 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost\_93, Akoma\_93, Audrey\_93, Baloo\_92, Bernardo\_91, Briakila\_93, Casbah\_93, ChaChing\_93, Chalmers\_92, Compostia\_92, Daisy\_92, Deenasa\_93, Devonte\_91, Gervas\_94, Glubnar\_92, Halfpint\_92, LestyG\_91, Marley1013\_92, Marlia\_92, MmasiCarm\_94, Morty007\_90, Neos5\_91, Nozo\_93, Obutu\_95, Phaedrus\_88, Phayeta\_95, Phlyer\_93, Pipefish\_92, RagingRooster\_92,

Rita1961\_94, RomaT\_93, Shenandoah\_92, SlippinJimmy\_96, SwainyDoc\_93, SynergyX\_93,

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

- Athena\_95, Ben11\_93, Chandler\_93, Chentzyk\_95, Corofin\_93, Gadget\_91, GlenHope\_94, HarveySr\_90, Heathcliff\_93, Jackstina\_87, Kamiyu\_93, Kronus\_93, Mortcellus\_93, Olivio\_93, OrangeOswald\_92, Philly\_92, TinyTerror\_94, Tydolla\_89, Yahalom\_91,

Genes that do not have the "Most Annotated" start:

- Yinz\_91,

### Summary by start number:

Start 6:

- Found in 39 of 55 ( 70.9% ) of genes in pham
- Manual Annotations of this start: 4 of 45
- Called 15.4% of time when present
- Phage (with cluster) where this start called: Heathcliff\_93 (B3), Jackstina\_87 (B3), Olivio\_93 (B3), OrangeOswald\_92 (B3), TinyTerror\_94 (B3), Tydolla\_89 (B3),

Start 7:

- Found in 35 of 55 ( 63.6% ) of genes in pham
- Manual Annotations of this start: 11 of 45
- Called 37.1% of time when present
- Phage (with cluster) where this start called: Athena\_95 (B3), Ben11\_93 (B3), Chandler\_93 (B3), Chentzyk\_95 (B3), Corofin\_93 (B3), Gadget\_91 (B3), GlenHope\_94 (B3), HarveySr\_90 (B3), Kamiyu\_93 (B3), Kronus\_93 (B3), Mortcellus\_93 (B3), Philly\_92 (B3), Yahalom\_91 (B3),

Start 8:

- Found in 54 of 55 ( 98.2% ) of genes in pham
- Manual Annotations of this start: 29 of 45
- Called 64.8% of time when present
- Phage (with cluster) where this start called: Abingghost\_93 (B3), Akoma\_93 (B3), Audrey\_93 (B3), Baloo\_92 (B3), Bernardo\_91 (B3), Briakila\_93 (B3), Casbah\_93 (B3), ChaChing\_93 (B3), Chalmers\_92 (B3), Compostia\_92 (B3), Daisy\_92 (B3), Deenasa\_93 (B3), Devonte\_91 (B3), Gervas\_94 (B3), Glubnar\_92 (B3), Halfpint\_92 (B3), LestyG\_91 (B3), Marley1013\_92 (B3), Marlia\_92 (B3), MmasiCarm\_94 (B3), Morty007\_90 (B3), Neos5\_91 (B3), Nozo\_93 (B3), Obutu\_95 (B3), Phaedrus\_88 (B3), Phayeta\_95 (B3), Phlyer\_93 (B3), Pipefish\_92 (B3), RagingRooster\_92 (B3), Rita1961\_94 (B3), RomaT\_93 (B3), Shenandoah\_92 (B3), SlippinJimmy\_96 (B3), SwainyDoc\_93 (B3), SynergyX\_93 (B3),

Start 13:

- Found in 1 of 55 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 45
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yinz\_91 (B3),

### Summary by clusters:

There is one cluster represented in this pham: B3

Info for manual annotations of cluster B3:

- Start number 6 was manually annotated 4 times for cluster B3.
- Start number 7 was manually annotated 11 times for cluster B3.
- Start number 8 was manually annotated 29 times for cluster B3.
- Start number 13 was manually annotated 1 time for cluster B3.

**Gene Information:**

Gene: Abinghost\_93 Start: 64507, Stop: 64127, Start Num: 8

Candidate Starts for Abinghost\_93:

(3, 64549), (5, 64528), (Start: 6 @64513 has 4 MA's), (Start: 7 @64510 has 11 MA's), (Start: 8 @64507 has 29 MA's), (12, 64456), (15, 64417), (16, 64405), (18, 64333), (19, 64249), (20, 64243), (21, 64222), (23, 64201), (24, 64147),

Gene: Akoma\_93 Start: 64546, Stop: 64166, Start Num: 8

Candidate Starts for Akoma\_93:

(Start: 8 @64546 has 29 MA's), (12, 64495), (15, 64456), (16, 64444), (18, 64372), (19, 64288), (20, 64282), (21, 64261), (23, 64240), (24, 64186),

Gene: Athena\_95 Start: 65283, Stop: 64900, Start Num: 7

Candidate Starts for Athena\_95:

(3, 65322), (5, 65301), (Start: 6 @65286 has 4 MA's), (Start: 7 @65283 has 11 MA's), (Start: 8 @65280 has 29 MA's), (12, 65229), (15, 65190), (16, 65178), (18, 65106), (19, 65022), (20, 65016), (21, 64995), (23, 64974), (24, 64920),

Gene: Audrey\_93 Start: 64534, Stop: 64154, Start Num: 8

Candidate Starts for Audrey\_93:

(3, 64576), (4, 64561), (5, 64555), (Start: 6 @64540 has 4 MA's), (Start: 8 @64534 has 29 MA's), (12, 64483), (15, 64444), (16, 64432), (18, 64360), (19, 64276), (20, 64270), (21, 64249), (23, 64228), (24, 64174),

Gene: Baloo\_92 Start: 64387, Stop: 64007, Start Num: 8

Candidate Starts for Baloo\_92:

(3, 64429), (4, 64414), (5, 64408), (Start: 6 @64393 has 4 MA's), (Start: 7 @64390 has 11 MA's), (Start: 8 @64387 has 29 MA's), (12, 64336), (15, 64297), (16, 64285), (18, 64213), (19, 64129), (20, 64123), (21, 64102), (23, 64081), (24, 64027),

Gene: Ben11\_93 Start: 64767, Stop: 64384, Start Num: 7

Candidate Starts for Ben11\_93:

(3, 64806), (5, 64785), (Start: 6 @64770 has 4 MA's), (Start: 7 @64767 has 11 MA's), (Start: 8 @64764 has 29 MA's), (12, 64713), (15, 64674), (16, 64662), (18, 64590), (19, 64506), (20, 64500), (21, 64479), (23, 64458), (24, 64404),

Gene: Bernardo\_91 Start: 64020, Stop: 63640, Start Num: 8

Candidate Starts for Bernardo\_91:

(Start: 8 @64020 has 29 MA's), (12, 63969), (15, 63930), (16, 63918), (18, 63846), (19, 63762), (20, 63756), (21, 63735), (23, 63714), (24, 63660),

Gene: Briakila\_93 Start: 64757, Stop: 64353, Start Num: 8

Candidate Starts for Briakila\_93:

(2, 64955), (Start: 8 @64757 has 29 MA's), (9, 64742), (11, 64709), (14, 64688), (18, 64559), (19, 64475), (20, 64469), (21, 64448), (23, 64427), (24, 64373),

Gene: Casbah\_93 Start: 64849, Stop: 64469, Start Num: 8

Candidate Starts for Casbah\_93:

(3, 64891), (5, 64870), (Start: 6 @64855 has 4 MA's), (Start: 7 @64852 has 11 MA's), (Start: 8 @64849 has 29 MA's), (12, 64798), (15, 64759), (16, 64747), (18, 64675), (19, 64591), (20, 64585), (21, 64564), (23, 64543), (24, 64489),

Gene: ChaChing\_93 Start: 64547, Stop: 64167, Start Num: 8

Candidate Starts for ChaChing\_93:

(3, 64589), (5, 64568), (Start: 6 @64553 has 4 MA's), (Start: 7 @64550 has 11 MA's), (Start: 8 @64547 has 29 MA's), (12, 64496), (15, 64457), (16, 64445), (18, 64373), (19, 64289), (20, 64283), (21, 64262), (23, 64241), (24, 64187),

Gene: Chalmers\_92 Start: 65004, Stop: 64600, Start Num: 8

Candidate Starts for Chalmers\_92:

(2, 65202), (Start: 8 @65004 has 29 MA's), (9, 64989), (11, 64956), (14, 64935), (18, 64806), (19, 64722), (20, 64716), (21, 64695), (23, 64674), (24, 64620),

Gene: Chandler\_93 Start: 65326, Stop: 64943, Start Num: 7

Candidate Starts for Chandler\_93:

(3, 65365), (5, 65344), (Start: 6 @65329 has 4 MA's), (Start: 7 @65326 has 11 MA's), (Start: 8 @65323 has 29 MA's), (12, 65272), (15, 65233), (16, 65221), (18, 65149), (19, 65065), (20, 65059), (21, 65038), (23, 65017), (24, 64963),

Gene: Chentzyk\_95 Start: 65482, Stop: 65099, Start Num: 7

Candidate Starts for Chentzyk\_95:

(3, 65521), (5, 65500), (Start: 6 @65485 has 4 MA's), (Start: 7 @65482 has 11 MA's), (Start: 8 @65479 has 29 MA's), (12, 65428), (15, 65389), (16, 65377), (18, 65305), (19, 65221), (20, 65215), (21, 65194), (23, 65173), (24, 65119),

Gene: Compostia\_92 Start: 65001, Stop: 64621, Start Num: 8

Candidate Starts for Compostia\_92:

(1, 65214), (3, 65043), (4, 65028), (5, 65022), (Start: 6 @65007 has 4 MA's), (Start: 7 @65004 has 11 MA's), (Start: 8 @65001 has 29 MA's), (12, 64950), (15, 64911), (16, 64899), (18, 64827), (19, 64743), (20, 64737), (21, 64716), (23, 64695), (24, 64641),

Gene: Corofin\_93 Start: 64561, Stop: 64178, Start Num: 7

Candidate Starts for Corofin\_93:

(1, 64771), (3, 64600), (4, 64585), (5, 64579), (Start: 6 @64564 has 4 MA's), (Start: 7 @64561 has 11 MA's), (Start: 8 @64558 has 29 MA's), (12, 64507), (15, 64468), (16, 64456), (18, 64384), (19, 64300), (20, 64294), (21, 64273), (23, 64252), (24, 64198),

Gene: Daisy\_92 Start: 64107, Stop: 63727, Start Num: 8

Candidate Starts for Daisy\_92:

(3, 64149), (5, 64128), (Start: 6 @64113 has 4 MA's), (Start: 7 @64110 has 11 MA's), (Start: 8 @64107 has 29 MA's), (12, 64056), (15, 64017), (16, 64005), (18, 63933), (19, 63849), (20, 63843), (21, 63822), (23, 63801), (24, 63747),

Gene: Deenasa\_93 Start: 65480, Stop: 65076, Start Num: 8

Candidate Starts for Deenasa\_93:

(2, 65678), (Start: 8 @65480 has 29 MA's), (9, 65465), (11, 65432), (14, 65411), (18, 65282), (19, 65198), (20, 65192), (21, 65171), (23, 65150), (24, 65096),

Gene: Devonte\_91 Start: 64173, Stop: 63793, Start Num: 8

Candidate Starts for Devonte\_91:

(3, 64215), (5, 64194), (Start: 6 @64179 has 4 MA's), (Start: 7 @64176 has 11 MA's), (Start: 8 @64173 has 29 MA's), (12, 64122), (15, 64083), (16, 64071), (18, 63999), (19, 63915), (20, 63909), (21, 63888), (23, 63867), (24, 63813),

Gene: Gadget\_91 Start: 64208, Stop: 63825, Start Num: 7

Candidate Starts for Gadget\_91:

(3, 64247), (5, 64226), (Start: 6 @64211 has 4 MA's), (Start: 7 @64208 has 11 MA's), (Start: 8 @64205 has 29 MA's), (12, 64154), (15, 64115), (16, 64103), (18, 64031), (19, 63947), (20, 63941), (21, 63920), (23, 63899), (24, 63845),

Gene: Gervas\_94 Start: 65002, Stop: 64622, Start Num: 8

Candidate Starts for Gervas\_94:

(3, 65044), (5, 65023), (Start: 6 @65008 has 4 MA's), (Start: 7 @65005 has 11 MA's), (Start: 8 @65002 has 29 MA's), (12, 64951), (15, 64912), (16, 64900), (18, 64828), (19, 64744), (20, 64738), (21, 64717), (23, 64696), (24, 64642),

Gene: GlenHope\_94 Start: 64580, Stop: 64197, Start Num: 7

Candidate Starts for GlenHope\_94:

(3, 64619), (5, 64598), (Start: 6 @64583 has 4 MA's), (Start: 7 @64580 has 11 MA's), (Start: 8 @64577 has 29 MA's), (12, 64526), (15, 64487), (16, 64475), (18, 64403), (19, 64319), (20, 64313), (21, 64292), (23, 64271), (24, 64217),

Gene: Glubnar\_92 Start: 64455, Stop: 63952, Start Num: 8

Candidate Starts for Glubnar\_92:

(Start: 8 @64455 has 29 MA's), (10, 64407), (17, 64308), (22, 64152), (26, 64074), (27, 64068), (28, 64047), (29, 64026), (30, 63972),

Gene: Halfpint\_92 Start: 64322, Stop: 63942, Start Num: 8

Candidate Starts for Halfpint\_92:

(3, 64364), (5, 64343), (Start: 6 @64328 has 4 MA's), (Start: 7 @64325 has 11 MA's), (Start: 8 @64322 has 29 MA's), (12, 64271), (15, 64232), (16, 64220), (18, 64148), (19, 64064), (20, 64058), (21, 64037), (23, 64016), (24, 63962),

Gene: HarveySr\_90 Start: 63649, Stop: 63266, Start Num: 7

Candidate Starts for HarveySr\_90:

(3, 63688), (5, 63667), (Start: 6 @63652 has 4 MA's), (Start: 7 @63649 has 11 MA's), (Start: 8 @63646 has 29 MA's), (12, 63595), (15, 63556), (16, 63544), (18, 63472), (19, 63388), (20, 63382), (21, 63361), (23, 63340), (24, 63286),

Gene: Heathcliff\_93 Start: 64507, Stop: 64121, Start Num: 6

Candidate Starts for Heathcliff\_93:

(3, 64543), (5, 64522), (Start: 6 @64507 has 4 MA's), (Start: 7 @64504 has 11 MA's), (Start: 8 @64501 has 29 MA's), (12, 64450), (15, 64411), (16, 64399), (18, 64327), (19, 64243), (20, 64237), (21, 64216), (23, 64195), (24, 64141),

Gene: Jackstina\_87 Start: 64424, Stop: 64038, Start Num: 6

Candidate Starts for Jackstina\_87:

(1, 64631), (3, 64460), (4, 64445), (5, 64439), (Start: 6 @64424 has 4 MA's), (Start: 7 @64421 has 11 MA's), (Start: 8 @64418 has 29 MA's), (12, 64367), (15, 64328), (16, 64316), (18, 64244), (19, 64160), (20, 64154), (21, 64133), (23, 64112), (24, 64058),

Gene: Kamiyu\_93 Start: 64508, Stop: 64125, Start Num: 7

Candidate Starts for Kamiyu\_93:

(3, 64547), (5, 64526), (Start: 6 @64511 has 4 MA's), (Start: 7 @64508 has 11 MA's), (Start: 8 @64505 has 29 MA's), (12, 64454), (15, 64415), (16, 64403), (18, 64331), (19, 64247), (20, 64241), (21, 64220), (23, 64199), (24, 64145),

Gene: Kronus\_93 Start: 65592, Stop: 65209, Start Num: 7

Candidate Starts for Kronus\_93:

(3, 65631), (5, 65610), (Start: 6 @65595 has 4 MA's), (Start: 7 @65592 has 11 MA's), (Start: 8 @65589 has 29 MA's), (12, 65538), (15, 65499), (16, 65487), (18, 65415), (19, 65331), (20, 65325), (21, 65304), (23, 65283), (24, 65229),

Gene: LestyG\_91 Start: 64076, Stop: 63696, Start Num: 8

Candidate Starts for LestyG\_91:

(3, 64118), (5, 64097), (Start: 6 @64082 has 4 MA's), (Start: 7 @64079 has 11 MA's), (Start: 8 @64076 has 29 MA's), (12, 64025), (15, 63986), (16, 63974), (18, 63902), (19, 63818), (20, 63812), (21, 63791), (23, 63770), (24, 63716),

Gene: Marley1013\_92 Start: 64998, Stop: 64618, Start Num: 8

Candidate Starts for Marley1013\_92:

(Start: 8 @64998 has 29 MA's), (12, 64947), (15, 64908), (16, 64896), (18, 64824), (19, 64740), (20, 64734), (21, 64713), (23, 64692), (24, 64638), (25, 64629),

Gene: Marlia\_92 Start: 64323, Stop: 63955, Start Num: 8

Candidate Starts for Marlia\_92:

(2, 64527), (Start: 8 @64323 has 29 MA's), (10, 64275), (17, 64176), (22, 64020),

Gene: MmasiCarm\_94 Start: 64933, Stop: 64553, Start Num: 8

Candidate Starts for MmasiCarm\_94:

(3, 64975), (5, 64954), (Start: 6 @64939 has 4 MA's), (Start: 7 @64936 has 11 MA's), (Start: 8 @64933 has 29 MA's), (12, 64882), (15, 64843), (16, 64831), (18, 64759), (19, 64675), (20, 64669), (21, 64648), (23, 64627), (24, 64573),

Gene: Mortcellus\_93 Start: 65674, Stop: 65291, Start Num: 7

Candidate Starts for Mortcellus\_93:

(3, 65713), (5, 65692), (Start: 6 @65677 has 4 MA's), (Start: 7 @65674 has 11 MA's), (Start: 8 @65671 has 29 MA's), (12, 65620), (15, 65581), (16, 65569), (18, 65497), (19, 65413), (20, 65407), (21, 65386), (23, 65365), (24, 65311),

Gene: Morty007\_90 Start: 65022, Stop: 64618, Start Num: 8

Candidate Starts for Morty007\_90:

(2, 65220), (Start: 8 @65022 has 29 MA's), (9, 65007), (11, 64974), (14, 64953), (18, 64824), (19, 64740), (20, 64734), (21, 64713), (23, 64692), (24, 64638), (25, 64629),

Gene: Neos5\_91 Start: 64478, Stop: 64074, Start Num: 8

Candidate Starts for Neos5\_91:

(2, 64676), (Start: 8 @64478 has 29 MA's), (9, 64463), (11, 64430), (14, 64409), (18, 64280), (19, 64196), (20, 64190), (21, 64169), (23, 64148), (24, 64094), (25, 64085),

Gene: Nozo\_93 Start: 65312, Stop: 64932, Start Num: 8

Candidate Starts for Nozo\_93:

(3, 65354), (5, 65333), (Start: 6 @65318 has 4 MA's), (Start: 7 @65315 has 11 MA's), (Start: 8 @65312 has 29 MA's), (12, 65261), (15, 65222), (16, 65210), (18, 65138), (19, 65054), (20, 65048), (21, 65027), (23, 65006), (24, 64952),

Gene: Obutu\_95 Start: 65116, Stop: 64736, Start Num: 8

Candidate Starts for Obutu\_95:

(3, 65158), (5, 65137), (Start: 6 @65122 has 4 MA's), (Start: 7 @65119 has 11 MA's), (Start: 8 @65116 has 29 MA's), (12, 65065), (15, 65026), (16, 65014), (18, 64942), (19, 64858), (20, 64852), (21, 64831), (23, 64810), (24, 64756),

Gene: Olivio\_93 Start: 64758, Stop: 64372, Start Num: 6

Candidate Starts for Olivio\_93:

(3, 64794), (5, 64773), (Start: 6 @64758 has 4 MA's), (Start: 7 @64755 has 11 MA's), (Start: 8 @64752 has 29 MA's), (12, 64701), (15, 64662), (16, 64650), (18, 64578), (19, 64494), (20, 64488), (21, 64467), (23, 64446), (24, 64392),

Gene: OrangeOswald\_92 Start: 64553, Stop: 64167, Start Num: 6

Candidate Starts for OrangeOswald\_92:

(3, 64589), (5, 64568), (Start: 6 @64553 has 4 MA's), (Start: 7 @64550 has 11 MA's), (Start: 8 @64547 has 29 MA's), (12, 64496), (15, 64457), (16, 64445), (18, 64373), (19, 64289), (20, 64283), (21, 64262), (23, 64241), (24, 64187),

Gene: Phaedrus\_88 Start: 63962, Stop: 63582, Start Num: 8

Candidate Starts for Phaedrus\_88:

(3, 64004), (5, 63983), (Start: 6 @63968 has 4 MA's), (Start: 7 @63965 has 11 MA's), (Start: 8 @63962 has 29 MA's), (12, 63911), (15, 63872), (16, 63860), (18, 63788), (19, 63704), (20, 63698), (21, 63677), (23, 63656), (24, 63602),

Gene: Phayeta\_95 Start: 64759, Stop: 64256, Start Num: 8

Candidate Starts for Phayeta\_95:

(Start: 8 @64759 has 29 MA's), (10, 64711), (17, 64612), (26, 64378), (27, 64372), (28, 64351), (29, 64330), (30, 64276),

Gene: Philly\_92 Start: 64398, Stop: 64015, Start Num: 7

Candidate Starts for Philly\_92:

(1, 64608), (3, 64437), (4, 64422), (5, 64416), (Start: 6 @64401 has 4 MA's), (Start: 7 @64398 has 11 MA's), (Start: 8 @64395 has 29 MA's), (12, 64344), (15, 64305), (16, 64293), (18, 64221), (19, 64137), (20, 64131), (21, 64110), (23, 64089), (24, 64035),

Gene: Phlyer\_93 Start: 65257, Stop: 64877, Start Num: 8

Candidate Starts for Phlyer\_93:

(3, 65299), (4, 65284), (5, 65278), (Start: 6 @65263 has 4 MA's), (Start: 7 @65260 has 11 MA's), (Start: 8 @65257 has 29 MA's), (12, 65206), (15, 65167), (16, 65155), (18, 65083), (19, 64999), (20, 64993), (21, 64972), (23, 64951), (24, 64897),

Gene: Pipefish\_92 Start: 64949, Stop: 64569, Start Num: 8

Candidate Starts for Pipefish\_92:

(3, 64991), (4, 64976), (5, 64970), (Start: 6 @64955 has 4 MA's), (Start: 8 @64949 has 29 MA's), (12, 64898), (15, 64859), (16, 64847), (18, 64775), (19, 64691), (20, 64685), (21, 64664), (23, 64643), (24, 64589),



Gene: RagingRooster\_92 Start: 64262, Stop: 63858, Start Num: 8

Candidate Starts for RagingRooster\_92:

(2, 64460), (Start: 8 @64262 has 29 MA's), (9, 64247), (11, 64214), (14, 64193), (18, 64064), (19, 63980), (20, 63974), (21, 63953), (23, 63932), (24, 63878),

Gene: Rita1961\_94 Start: 64888, Stop: 64508, Start Num: 8

Candidate Starts for Rita1961\_94:

(3, 64930), (4, 64915), (5, 64909), (Start: 6 @64894 has 4 MA's), (Start: 8 @64888 has 29 MA's), (12, 64837), (15, 64798), (16, 64786), (18, 64714), (19, 64630), (20, 64624), (21, 64603), (23, 64582), (24, 64528),

Gene: RomaT\_93 Start: 65111, Stop: 64731, Start Num: 8

Candidate Starts for RomaT\_93:

(3, 65153), (5, 65132), (Start: 6 @65117 has 4 MA's), (Start: 7 @65114 has 11 MA's), (Start: 8 @65111 has 29 MA's), (12, 65060), (15, 65021), (16, 65009), (18, 64937), (19, 64853), (20, 64847), (21, 64826), (23, 64805), (24, 64751),

Gene: Shenandoah\_92 Start: 64182, Stop: 63778, Start Num: 8

Candidate Starts for Shenandoah\_92:

(2, 64380), (Start: 8 @64182 has 29 MA's), (9, 64167), (11, 64134), (14, 64113), (18, 63984), (19, 63900), (20, 63894), (21, 63873), (23, 63852), (24, 63798),

Gene: SlippinJimmy\_96 Start: 65911, Stop: 65531, Start Num: 8

Candidate Starts for SlippinJimmy\_96:

(3, 65953), (4, 65938), (5, 65932), (Start: 6 @65917 has 4 MA's), (Start: 8 @65911 has 29 MA's), (12, 65860), (15, 65821), (16, 65809), (18, 65737), (19, 65653), (20, 65647), (21, 65626), (23, 65605), (24, 65551),

Gene: SwainyDoc\_93 Start: 64939, Stop: 64436, Start Num: 8

Candidate Starts for SwainyDoc\_93:

(Start: 8 @64939 has 29 MA's), (10, 64891), (17, 64792), (22, 64636), (26, 64558), (27, 64552), (28, 64531), (29, 64510), (30, 64456),

Gene: SynergyX\_93 Start: 64572, Stop: 64168, Start Num: 8

Candidate Starts for SynergyX\_93:

(2, 64770), (Start: 8 @64572 has 29 MA's), (9, 64557), (11, 64524), (14, 64503), (18, 64374), (19, 64290), (20, 64284), (21, 64263), (23, 64242), (24, 64188),

Gene: TinyTerror\_94 Start: 64980, Stop: 64594, Start Num: 6

Candidate Starts for TinyTerror\_94:

(3, 65016), (5, 64995), (Start: 6 @64980 has 4 MA's), (Start: 7 @64977 has 11 MA's), (Start: 8 @64974 has 29 MA's), (12, 64923), (15, 64884), (16, 64872), (18, 64800), (19, 64716), (20, 64710), (21, 64689), (23, 64668), (24, 64614),

Gene: Tydolla\_89 Start: 64535, Stop: 64149, Start Num: 6

Candidate Starts for Tydolla\_89:

(1, 64742), (3, 64571), (5, 64550), (Start: 6 @64535 has 4 MA's), (Start: 7 @64532 has 11 MA's), (Start: 8 @64529 has 29 MA's), (12, 64478), (15, 64439), (16, 64427), (18, 64355), (19, 64271), (20, 64265), (21, 64244), (23, 64223), (24, 64169),

Gene: Yahalom\_91 Start: 64357, Stop: 63974, Start Num: 7

Candidate Starts for Yahalom\_91:

(3, 64396), (5, 64375), (Start: 6 @64360 has 4 MA's), (Start: 7 @64357 has 11 MA's), (Start: 8 @64354 has 29 MA's), (12, 64303), (15, 64264), (16, 64252), (18, 64180), (19, 64096), (20, 64090), (21, 64069), (23, 64048), (24, 63994),

Gene: Yinz\_91 Start: 63899, Stop: 63570, Start Num: 13

Candidate Starts for Yinz\_91:

(Start: 13 @63899 has 1 MA's), (15, 63860), (16, 63848), (18, 63776), (19, 63692), (20, 63686), (21, 63665), (23, 63644), (24, 63590),