fitDTVARMx: External Tests

Ivan Jacob Agaloos Pesigan

Tests

```
#> test-external-fitDTVARMx-fit-dt-var-id-mx-psi-diag
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   759.332723034266
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.33272 (started at 2818.8767)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716461594268781,0.461130103434526,-0.111058104052503,0.00301990065158215,0.627962466371071,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   811.221283431467
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.22128 (started at 2588.505)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.644376822379958,0.498319862422355,-0.160138757853946,0.0339457523281381,0.60202505558271,0.4385
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   851.056191919888
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 2728.4921)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.650804152587558,0.500936223533729,-0.117869966244044,0.0358584466671872,0.581033255621994,0.45
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   758.939240001087
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.93924 (started at 2854.9595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6942524827475 68,0.508254712117776,-0.105604057104861,0.00403646757951646,0.632271243648902,0.45
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   755.237014820988
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=755.23701 (started at 2812.8936)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655922071168991,0.485798776878 36,-0.0839744194072475,0.0298173300980825,0.656191959996754,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.863852470668
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.86385 (started at 2522.5355)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6661111148917,0.464519076919049,-0.0655319370278874,0.0379815425135491,0.576484188972957,0.401
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.608080756468
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.60808 (started at 3214.4662)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7095130550531,0.512499712173206,-0.0692805896211676,0.0311077019364299,0.614389046595127,0.379
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   828.951705065187
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.95171 (started at 3126.4497)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733264788863225,0.473562971107431,-0.173022757515241,-0.0104990839461825,0.625703544856902,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   746.033688503384
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=746.03369 (started at 2638.9239)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668484301092742,0.51138621629638,-0.0225537318120472,-0.0555161115431583,0.637385379142246,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.374280350207
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.37428 (started at 3004.5656)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.718825722836537,0.48235380270807,-0.169307336880467,-0.00202819864122296,0.619552406230925,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   799.274821858165
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.27482 (started at 2962.9231)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708588261228634,0.475388229135813,-0.0854309590011715,-0.0141769414286767,0.629365493947916,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   840.483916141231
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.48392 (started at 3098.1221)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.720735518069381,0.499551991405701,-0.149780544748022,-0.00930202643115042,0.574215681169346,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   718.539233542402
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.53923 (started at 2186.5411)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677880341672318,0.431826450749655,-0.166188298322661,-0.0373797352663127,0.594622543905395,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   779.766644444407
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.76664 (started at 2675.0592)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.609971646719175,0.539347774502O1,-0.112605660413882,0.0157158111595143,0.616305811402161,0.424
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   850.752343563444
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.75234 (started at 3142.1671)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.691623804012226,0.471544485897595,-0.0100294723327233,0.0250565521854465,0.633323731032243,0.4
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   872.34306757139
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=872.34307 (started at 2583.8942)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.627986746606938,0.50335892249985,-0.108103630273034,0.0109464645923342,0.592093464791283,0.384
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   764.239047454334
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.23905 (started at 2962.0687)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67105294053085,0.449887649000752,-0.143458815256208,0.0768224346437029,0.627515746666162,0.396
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   957.9243775737505
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=957.92438 (started at 3332.8123)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.739922346378846,0.485927042232824,-0.0717538017632368,-0.0342026956014292,0.6240774938083,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   633.011904428566
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=633.0119 (started at 2223.8663)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690213513068111,0.466362670344152,-0.0879599163745913,-0.0170226181885829,0.624374818924666,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   694.317115186718
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=694.31712 (started at 2880.1989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674456574145247,0.531884168814988,-0.0838788035112604,0.0242219856483305,0.605791688734476,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   706.595319003195
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.59532 (started at 2831.2135)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696198361443529,0.47033350806689,-0.0677346577381333,0.0443111669122736,0.641500229796633,0.381
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   750.698512473323
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.69851 (started at 2617.189)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671673577610027,0.553223041143065,-0.0309216980368968,0.027945584674691,0.576180619805424,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   833.816258681054
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81626 (started at 2874.4152)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64049564483478,0.521837363160335,-0.133809910294518,0.00875136386287813,0.607513730708 68,0.35
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   863.215725480729
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=863.21573 (started at 2735.9084)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.702336925380831,0.526763645809178,-0.10302942237239,-0.0646796395406807,0.566209899448809,0.41
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   782.276989787587
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=782.27699 (started at 2818.3029)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.751079842826758,0.515348162651717,-0.0856261602381017,-0.0423177565833913,0.565376921520485,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   885.400081850406
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.40008 (started at 3108.7275)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711902034855524,0.492753831090941,-0.0766983681358221,0.0284133659575973,0.592131565493811,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   870.776467535204
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=870.77647 (started at 2947.4234)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717342945794694,0.483864010973883,-0.0377741740801736,-0.00846860357385741,0.59273073403503,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   825.091328764683
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=825.09133 (started at 2726.9105)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.671378784761566,0.495755549187164,-0.106318495635697,0.0223503756046088,0.58423655700464,0.439
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   732.657907507978
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=732.65791 (started at 2991.6161)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764032648283235,0.471287001814766,-0.082229982090093,-0.00101245837563025,0.622298962927359,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   726.376014908232
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=726.37601 (started at 2487.1488)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.698020505561103,0.540256679924573,-0.130671049333998,0.0219015717434524,0.536368805316912,0.39
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   743.06253438225
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.06253 (started at 2694.1576)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.731754835793631,0.460965075767634,-0.1434716820242,-0.0216993813992399,0.6049383953541,0.42084
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   797.484023499137
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.48402 (started at 2668.9238)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6762776947936 17,0.501583771707843,-0.06187973035375,-0.0193575825688431,0.614583065520855,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   770.977494676037
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=770.97749 (started at 2648.519)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706895800327194,0.511010577888189,-0.0872678711618278,0.0314694503916333,0.601610168470179,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   749.349505885161
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.34951 (started at 2244.6977)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.653912522999667,0.510586048106383,-0.100988573067708,-0.0413976764995652,0.545606806035989,0.39
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   889.8616765020777
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.86168 (started at 2694.2373)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6642893712791 09,0.5102449367562 76,-0.1016766676219 02,-0.0011836799932 8859,0.5695084024377 11,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   725.595924157009
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.59592 (started at 2203.3335)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6113883494090 92,0.5245113588901 67,-0.1241845842438 65,0.0219294400932992,0.5420406047368 46,0.395
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   812.090920433365
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.09092 (started at 3110.0582)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7417519129415 88,0.4693205593884 66,-0.0879921988685319,-0.0380914370049528,0.6544367930942 38,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   815.197848341689
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=815.19785 (started at 2666.7364)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6932274607788832,0.409815304298299,-0.0514572211617755,-0.0205940886660018,0.635597773482195,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   820.593168415493
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=820.59317 (started at 2295.3086)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643304825135551,0.397856735560794,-0.0386468193218034,-0.00783303145434867,0.661822704299331,0
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   752.466226469855
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=752.46623 (started at 2484.7537)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664098311347438,0.53099071164222,-0.106972800626957,0.0260199511752171,0.584333638614264,0.378
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   766.219955415809
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=766.21996 (started at 2540.8022)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624786762223102,0.480327062303527,-0.141720219803405,0.0410521888955309,0.634241889450656,0.44
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   768.771638793145
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 2411.4559)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744386847205346,0.465935456534318,-0.0692189873376725,-0.067624129591946 4,0.568648772015181,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   741.223147927192
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 2324.9388)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.66217885362191,0.438474928833818,-0.011144207357192,0.0120288807502441,0.594398291774759,0.3289
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   780.836285441667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.83629 (started at 2722.6984)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.690347402204549,0.490311341041875,-0.146390022374425,-0.0195401602514742,0.627402518041284,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   798.994200370794
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 2724.6975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.679564030022408,0.477657702995945,-0.037910120568797,0.0154876263593496,0.616824927873006,0.37
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   787.032257794103
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 2825.0508)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716093080348548,0.554203770132493,-0.123075968768171,-0.0417698302704187,0.571815555828147,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   751.084607795309
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.08461 (started at 2890.0689)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.66130950231391,0.532629819541967,-0.101641409043792,0.00192165906897013,0.614479809469556,0.398
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.680486764465
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.68049 (started at 2653.0473)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7115368732752 76,0.486718967297324,-0.182176023621629,-0.0261125305270112,0.599294484813252,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.418593752537
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.41859 (started at 3168.4061)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771433701226941,0.515790796170361,-0.0891381959878861,-0.0397577895392098,0.579395644538703,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   838.480905826361
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=838.48091 (started at 3078.7657)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746043240966985,0.531610392262968,-0.101115749197125,-0.0485678713783249,0.598258784644551,0.39
#> Test passed
```

```
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
```

```
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   759.332723034257
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.33272 (started at 767.23983)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716461585428167,0.461130087272103,-0.111058101747436,0.00301995000147525,0.627962429370563,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   811.221283431381
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.22128 (started at 819.93175)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.644376917883203,0.498319815027411,-0.160138649888563,0.0339457279840114,0.602025160800339,0.438
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.056191919858
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 866.15931)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.650804232121634,0.500936239033408,-0.117869944184811,0.0358583580157441,0.581033136227764,0.455
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   758.939240001087
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.93924 (started at 772.80857)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69425247833575,0.508254712519871,-0.105604056657861,0.00403646721373456,0.632271246543257,0.45
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   755.237014820981
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=755.23701 (started at 771.21109)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655922064526889,0.485798758415577,-0.0839744808979841,0.0298172928302494,0.656191949541491,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.863852470667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.86385 (started at 783.11641)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.666111127492906,0.464519086417875,-0.0655319230812842,0.0379815355531992,0.576484176671073,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.608080756468
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.60808 (started at 815.15868)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.709513062158392,0.512499708099355,-0.0692805796170135,0.0311076914010664,0.614389043033527,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   828.951705065182
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.95171 (started at 841.57206)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733264749902263,0.473562995775331,-0.173022759603442,-0.0104990560166985,0.625703542569827,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   746.033688503379
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=746.03369 (started at 764.8049)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668484300948304,0.511386214511344,-0.0225537199171085,-0.0555161395310054,0.637385350117328,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.374280350157
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.37428 (started at 861.62867)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.718825604736078,0.482353834528678,-0.169307271979635,-0.00202808228451628,0.61955237324617,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   799.274821858098
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.27482 (started at 805.58759)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708588218330156,0.475388236341846,-0.0854308202552785,-0.0141769860920425,0.629365591372229,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   840.483916141223
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.48392 (started at 851.00179)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7207355111764,0.499551928552273,-0.14978054704757,-0.00930203523468703,0.574215742590509,0.4583
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   718.539233542033
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.53923 (started at 741.63598)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677879886561889,0.431826550789902,-0.166188403762372,-0.0373795473864487,0.594622470548096,0.30
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   779.766644444383
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.76664 (started at 793.31737)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.609971703606512,0.539347830163897,-0.112605600194933,0.0157157744132437,0.616305785508771,0.424
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   850.752343563441
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.75234 (started at 870.41089)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.691623842946204,0.471544492587184,-0.01002945583283,0.025056547442537,0.633323728415006,0.43816
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   872.343067571387
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=872.34307 (started at 882.368)  (1 attempt(s):  1 valid,
0 errors)
#>  Start values from best fit:
#> 0.627986713114911,0.503358910622752,-0.108103614997471,0.0109464800897341,0.592093469438707,0.384
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   764.239047454333
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.23905 (started at 784.80812)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67105294959542,0.449887642591952,-0.143458786756119,0.0768224565147059,0.627515758592816,0.396
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   957.924375737499
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=957.92438 (started at 976.21158)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.739922367162102,0.48592706713264,-0.0717538245459881,-0.034202697660309,0.624077503132598,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   633.011904428516
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=633.0119 (started at 649.09008)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690213663823057,0.46636269930082,-0.0879598248789163,-0.0170226022112735,0.624374780340516,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   694.317115186692
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=694.31712 (started at 706.63832)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674456627932046,0.53188417705681,-0.0838787762828761,0.0242219079571848,0.605791639568043,0.402
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   706.595319002982
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.59532 (started at 719.7453)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696198214011712,0.470333597005126,-0.067734751668189,0.0443113891228755,0.641500260684122,0.381
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   750.698512473295
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.69851 (started at 759.7683)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671673609111645,0.553223089870081,-0.0309216931729336,0.0279455905537439,0.576180579623614,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   833.816258681048
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81626 (started at 845.53725)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.640499502275901,0.521837377170588,-0.133809939141175,0.0087513945145241 8,0.607513714681973,0.35
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   863.215725480724
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=863.21573 (started at 880.21941)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.70233691503351,0.52676364141794,-0.103029350673975,-0.0646796152983735,0.566209875148732,0.4158
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   782.27698978736
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=782.27699 (started at 802.16016)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.751080033038349,0.515348048019857,-0.0856262567981077,-0.0423177000638963,0.565376873969739,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   885.4000818504
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.40008 (started at 891.24522)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.711902092021382,0.492753826033058,-0.0766983353095619,0.0284133293266239,0.592131583550737,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   870.776467535192
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=870.77647 (started at 879.61589)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717343023727884,0.483863994996277,-0.037774213058378,-0.00846865630005986,0.592730738847854,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   825.091328764672
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=825.09133 (started at 836.69057)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671378801101552,0.495755542356324,-0.106318444891222,0.0223503254606083,0.584236589649017,0.439
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   732.657907507961
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=732.65791 (started at 743.57505)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764032687703439,0.471287014221847,-0.0822300063767158,-0.00101252774380534,0.62229897574047,0.3
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   726.376014908232
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=726.37601 (started at 742.41338)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.698020502933625,0.540256680629718,-0.130671062767118,0.021901574828572,0.536368802056704,0.397
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   743.062534381883
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.06253 (started at 756.40648)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.731754806899753,0.460964906274982,-0.143471428894092,-0.0216994359253728,0.604938695643486,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   797.484023499046
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.48402 (started at 806.83396)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676277609893595,0.501583766265347,-0.0618798951792299,-0.0193574397570838,0.614583011607736,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   770.97749467596
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=770.97749 (started at 784.17806)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706895709607195,0.511010671262467,-0.0872678739613862,0.0314695930810643,0.601610179752207,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   749.349505885138
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.34951 (started at 762.66042)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.653912563390342,0.510586038131102,-0.100988567723116,-0.0413977100766392,0.545606865185711,0.39
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   889.86167650208
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.86168 (started at 899.62257)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664289357214513,0.510244947029733,-0.101676632875796,-0.00118367609196996,0.569508435314849,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   725.595924156994
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.59592 (started at 751.84398)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.611388387413602,0.524511305659563,-0.124184601280723,0.0219294512140722,0.542040628278474,0.395
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   812.090920433347
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.09092 (started at 825.67386)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741751985990055,0.469320568926058,-0.08799220120145,-0.0380914980600275,0.654436815220724,0.375
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   815.197848341626
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=815.19785 (started at 829.66831)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.693227358332933,0.409815382546601,-0.0514574408005689,-0.0205940175054711,0.635597713904742,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   820.593168415362
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=820.59317 (started at 838.4595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64330480856716,0.397856533791987,-0.0386467541729308,-0.00783303856946256,0.661822861740966,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   752.466226469853
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=752.46623 (started at 760.05983)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664098292782441,0.530990710130654,-0.106972799788052,0.0260199662012602,0.584333638667574,0.378
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   766.2199554157775
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=766.21996 (started at 777.65895)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624786753491203,0.480326983366548,-0.141720275922804,0.041052227184432,0.634241947184696,0.4442
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   768.77163879313
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 784.45062)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.744386876914039,0.465935520562982,-0.0692190128049471,-0.0676241467206233,0.568648789348167,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   741.223147927187
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 755.42182)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662178896542466,0.438474917081386,-0.0111442189404204,0.01202887882265,0.594398301245561,0.3289
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   780.836285441667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.83629 (started at 791.00989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69034740431757,0.49031134831171,-0.146390033092329,-0.0195401623412294,0.627402508235676,0.4030
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   798.99420037079
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 803.52761)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67956403208763,0.47765774431945,-0.0379101593064794,0.0154875956487848,0.616824904549432,0.3708
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   787.0322577940 67
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 800.57952)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71609313261114,0.554203807091305,-0.123075940611452,-0.0417698485929651,0.571815552896042,0.423
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   751.0846077953 09
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.08461 (started at 761.5739)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.66130950018045,0.532629821554621,-0.101641402677008,0.00192166165092056,0.614479804396606,0.398
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.6804867644 55
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.68049 (started at 816.98743)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71153682967932,0.486719003709776,-0.182176075602796,-0.0261125286606419,0.5992944461216,0.40825
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   767.418593752494
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.41859 (started at 787.98087)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771433727134554,0.515790729464576,-0.089138196614291,-0.0397577183528818,0.579395652411828,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   838.480905826358
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=838.48091 (started at 847.96006)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746043269189541,0.531610400000595,-0.101115741712202,-0.0485678796475715,0.598258794430362,0.3

#> Test passed

#> test-external-fitDTVARMx-fit-dt-var-id-mx-psi-full-alpha
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   751.3197075867 26
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.31971 (started at 2229.3757)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7106986726122 39,0.464231679553437,-0.11102116306199,0.00283746175984587,0.627898442522914,0.42
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   799.929098809422
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.9291 (started at 2098.6642)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677525000489932,0.500259485778035,-0.185207023656727,0.0283007575306138,0.633238116592514,0.470
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   846.12692467565
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=846.12692 (started at 2172.2392)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.659549855212527,0.505094348530151,-0.1213778665835775,0.0309365889220294,0.582060023772473,0.462
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   750.995506579238
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.99551 (started at 2247.5487)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.692283499252786,0.517692825650103,-0.103818065095504,0.00519515130491422,0.627537167662428,0.44
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   749.079788124355
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.07979 (started at 2226.3377)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64800198571548,0.484658790388966,-0.0827367220426509,0.026065172092894,0.66395955968023,0.37175
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   759.575316725953
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.57532 (started at 2066.7412)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.685833291967864,0.483930775947376,-0.0741863593865353,0.0321051998353937,0.568802735303719,0.40
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   797.85700594014
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.85701 (started at 2447.0804)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.726950331024053,0.530434309148715,-0.0762157344291397,0.0256326786115388,0.603860446458367,0.37
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   824.489515851008
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=824.48952 (started at 2396.895)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.749008469762923,0.486532736972005,-0.179091877832254,-0.0187933732590467,0.620270676365448,0.39
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   729.933335460899
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=729.93334 (started at 2129.414)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655513790215204,0.501708527745329,-0.0273504582922774,-0.0655217915276379,0.636012939818082,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   845.526274930178
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=845.52627 (started at 2328.0718)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716500844776479,0.482524112964022,-0.167637156717685,-0.00119803355301945,0.621892358154475,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   796.50621914597
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=796.50622 (started at 2308.0631)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.706475912436415,0.474529074568528,-0.0857508421450056,-0.0128762528939037,0.634988337380834,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   833.620336510482
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.62034 (started at 2378.7879)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.747537296777547,0.517932376070432,-0.158627218187704,-0.0278830057771328,0.56635455981283,0.4675
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   706.628035023615
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.62804 (started at 1883.2835)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.760686167971080,0.486744236879712,-0.172909051703362,-0.068536065283611,0.57373702815362,0.3536
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   771.756028431703
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=771.75603 (started at 2148.3924)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.617188192634596,0.545537645273523,-0.117011297566589,0.0141512913264305,0.618479491891684,0.428
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   845.386465180059
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=845.38647 (started at 2403.5612)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717188977320426,0.485941806464164,-0.0120269302304653,0.0162051020954127,0.633223405735365,0.43
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   857.992340234505
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=857.99234 (started at 2095.0482)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.614543082561941,0.488260415329601,-0.128076482662355,0.0179190761224814,0.631965662147384,0.409
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   757.947096196131
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=757.9471 (started at 2310.0413)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.667885537571973,0.453507395992935,-0.141449922943678,0.0773218298346134,0.626895009665304,0.396
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   943.363193760907
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=943.36319 (started at 2503.6656)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.792445239739491,0.534094800170402,-0.0791212923661144,-0.0502954668654696,0.601289504555518,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   629.748761930334
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=629.74876 (started at 1906.4761)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6900594415022,0.46537217053471,-0.0881513919166146,-0.01841324677702307,0.6237275383417 53,0.372
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   685.9773636784 51
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=685.97736 (started at 2265.956)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.684689207162314,0.530779810492745,-0.0899771192503532,0.019218813174161,0.617417403969898,0.41
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   699.293873053153
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=699.29387 (started at 2239.7701)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69592707255325,0.464240179154982,-0.0738083851134474,0.0450222997042919,0.651999692012709,0.39
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   742.366071045534
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=742.36607 (started at 2117.0926)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668070309597822,0.545882523930911,-0.0338979777700287,0.0206921660402988,0.573261242507558,0.38
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   828.704031058726
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.70403 (started at 2258.2304)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.640589698052503,0.522165271636663,-0.135820548692625,0.00877497292596611,0.607186805106583,0.35
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   855.984992069123
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=855.98499 (started at 2178.3975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.730870866491904,0.535905330393162,-0.115086040758527,-0.0797037219001384,0.578920851898373,0.43
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   773.715854937933
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=773.71585 (started at 2225.8175)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.821135343380756,0.566515652694628,-0.0930378545235778,-0.0736306347425359,0.545074723970665,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   882.555537506634
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=882.55554 (started at 2385.7275)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708978400445967,0.484454669873341,-0.0818076153869978,0.0280335168005726,0.606310488637623,0.37
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   861.688059844655
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.68806 (started at 2296.2083)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.712279202763791,0.472005444239333,-0.0473022752724131,-0.00606864846439764,0.624794384984679,0
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   811.249677111081
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.24968 (started at 2174.2644)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.667835296428894,0.497259087992504,-0.102642975010063,0.0292084904037806,0.583428334883088,0.412
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   718.013120776681
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.01312 (started at 2324.5758)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.776148218481352,0.477957522158333,-0.0808564054414659,-0.00116572739505746,0.6192626189242,0.35
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   721.641929833905
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=721.64193 (started at 2045.8485)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696022650363952,0.5213100825671,-0.143890826968485,0.0244572977121305,0.57354679937456,0.42188
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   741.392846923845
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.39285 (started at 2162.7862)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.747334156147187,0.469595888434031,-0.146642807205517,-0.0278452470079462,0.601291315713392,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   793.752771312849
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=793.75277 (started at 2143.5016)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676304106609393,0.501899363478234,-0.0615343748677316,-0.0196665672098006,0.613320191153104,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   758.3759353707792
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.37594 (started at 2135.0557)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.703601907920078,0.506819022022055,-0.0888938750069582,0.0283675559538009,0.596297737890487,0.35
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   745.480840265412
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=745.48084 (started at 1911.4686)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.665555643668311,0.520562009585226,-0.104398962956006,-0.0456535282738814,0.541193346374449,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   879.218985519419
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=879.21899 (started at 2154.5893)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.659304160709976,0.510856504825393,-0.095169501077983,-0.00304603544496706,0.570279663573841,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   713.7670686665175
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=713.76707 (started at 1889.3562)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.623964358921534,0.53895595852417,-0.130977605981557,0.0179518627599035,0.533324895914419,0.402
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   810.5898777162439
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=810.58988 (started at 2389.0484)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741352636622978,0.470302678055133,-0.088884152969463,-0.0378899628498616,0.653905711823932,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   805.718771660322
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=805.71872 (started at 2144.8002)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.732506714721842,0.428151583151002,-0.0534038843895698,-0.0350866525204001,0.6270257776567685,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   805.880437088142
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=805.88044 (started at 1939.0374)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.649910066460673,0.400546472149857,-0.0483449427444411,-0.00821085321310572,0.662312864495339,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   749.639553147869
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.63955 (started at 2044.3254)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.663783936234673,0.528200072135185,-0.113204885470933,0.0261182865896794,0.597812038694944,0.388
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   756.700563528327
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=756.70056 (started at 2074.7797)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.619092605005105,0.47522013236907,-0.136693687329742,0.038436788861946,0.659557600992992,0.4455
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   754.801122634275
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=754.80112 (started at 2004.5256)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.734461372040959,0.480515707690313,-0.061920028819012 4,-0.0653753574131933,0.565140558763367,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   734.94662085054
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=734.94662 (started at 1960.8679)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.662330616821695,0.438945798877293,-0.0107644398673581,0.0111168460250986,0.59135937876082,0.32
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   777.291138049553
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=777.29114 (started at 2175.7975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.700342932428139,0.497603147250635,-0.149263023324469,-0.0231170875482341,0.624888187272695,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   793.2822778076025
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=793.28228 (started at 2177.0374)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674660777995952,0.485613131642965,-0.0386786786820122,0.0167231308538318,0.614962081229062,0.37
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   780.490732948688
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.49073 (started at 2228.0785)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716465011089326,0.559307893207383,-0.124313388622069,-0.0422768274512618,0.563292412417457,0.42
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   744.684793727984
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=744.68479 (started at 2268.5273)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.683502918026989,0.557644007056438,-0.099904046655935 4,-0.00802094399500194,0.608660891455904,0
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   802.891504569595
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=802.8915 (started at 2135.2237)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.713084475222978,0.470303115621683,-0.19522601244116,-0.0290643724684249,0.629366476413658,0.432
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   983.926205234353
#>  OpenMx status code 6 not in list of acceptable status codes, (0,0)
#>  Not all eigenvalues of the Hessian are positive:  6537261980.421777, 21569705.203697,
18460647.7122009, 2719810.96824211, 1367644.11378811, 472803.356287633, 157624.999438485,
71226.8201383017, 28431.37009612, 20936.2308906285, 11828.9623120691, 10310.2508198981,
5427.90448959588, 2509.47561410684, 1135.59751078603, 407.115831167405, 84.9292466451275,
28.2747583396299, 10.2189577563501, 6.04118508532553, -44.1793789780261
#>
#> Beginning fit attempt 1 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   983.742587880994
#>  OpenMx status code 6 not in list of acceptable status codes, (0,0)
```

```
#>  Not all eigenvalues of the Hessian are positive:  6738744744.9644, 22058980.6372001,
18943601.8050484, 2723092.37415228, 1362801.56150291, 474391.80831321, 158655.721425863,
73310.1666039648, 30953.8565048827, 21394.8753746191, 11852.3561015945, 10967.3652101734,
5374.58382331248, 2497.8682531035, 1143.0188894503 4, 465.968686176411, 247.131341232195,
28.2430587691851, 11.3215508242895, 4.32841636887773, -5.90455770675985
#>
#> Beginning fit attempt 2 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   983.742587876419
#>  OpenMx status code 6 not in list of acceptable status codes, (0,0)
#>  Not all eigenvalues of the Hessian are positive:  6738744771.94772, 22059210.7301515,
18943801.9486551, 2723092.27014829, 1362797.61346839, 474365.853576906, 158789.815915873,
73306.7854609091, 31282.4201939238, 21336.419096226, 11851.1776611367, 11115.0599051788,
5359.03477374511, 2494.78826423483, 1287.20996805878, 396.909047301856, 202.984714436844,
32.069554338026, 28.0898169879081, 8.20408402848791, -20.0788504214253
#>
#> Beginning fit attempt 3 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 4 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 5 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 6 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 7 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 8 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 9 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 10 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt worse than current best:   984.09601099863 vs 983.742587876419
#>
#> Beginning fit attempt 11 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 12 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 13 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 14 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 15 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 16 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 17 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
```

```
#>
#> Beginning fit attempt 18 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 19 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 20 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Fit attempt generated errors
#>
#> Beginning fit attempt 21 of at maximum 1000 extra tries
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   911.391417384424
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=911.39142 (started at 2421.1065)  (22 attempt(s):  5
valid, 17 errors)
#>  Start values from best fit:
#> -0.848498699631185,-0.898093018253193,0.12128292880814,1.30261858227797,1.69189852989285,0.198886
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   835.124892149316
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=835.12489 (started at 2367.2177)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.749524973072166,0.535967290556484,-0.10250210583215,-0.0499275891699892,0.596349748089177,0.39

#> Test passed

#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   751.3197075867 41
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.31971 (started at 1269.463)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71069864549473,0.464231686717646,-0.111021198793569,0.0028375017390776,0.6278984738387 55,0.426
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   799.929098809376
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.9291 (started at 1263.8017)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677525023393436,0.500259459118053,-0.185206988544427,0.0283008376220949,0.633238150398795,0.470
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   846.126924675452
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=846.12692 (started at 1283.4513)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.659549937384658,0.505094363716459,-0.121377882551958,0.0309365430929552,0.582060056239826,0.462
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   750.995506579154
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.99551 (started at 1280.9902)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.692283414294205,0.517692917929182,-0.103818191707354,0.00519528547782612,0.6275371773117779,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   749.079788124289
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.07979 (started at 1245.9536)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.648001909931465,0.484658810194989,-0.0827366492268269,0.0260652101363053,0.663959550155731,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   759.575316725861
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.57532 (started at 1248.7605)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.685833333457114,0.4839307422108 75,-0.0741864207819899,0.0321052262508275,0.568802615916586,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   797.857005940171
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.85701 (started at 1279.8614)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.726950358294461,0.530434299747253,-0.0762157630476543,0.0256326233612561,0.603860466655573,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   824.489515851079
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=824.48952 (started at 1289.1724)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.749008387912494,0.4865325479623,-0.179091855558883,-0.0187932972534965,0.620270639925025,0.395
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   729.933335460948
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=729.93334 (started at 1249.7777)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655513850383702,0.501708513630742,-0.0273504357492864,-0.0655218426868497,0.636012896631613,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   845.526274930183
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=845.52627 (started at 1303.4348)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716500837903992,0.482524126651012,-0.167637170158677,-0.00119804171195254,0.621892337563127,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   796.50621914596
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=796.50622 (started at 1269.6943)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.70647591280896,0.47452908232935,-0.0857508433753885,-0.0128762774812567,0.634988351525998,0.411
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   833.620336510446
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.62034 (started at 1290.7195)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.747537328256099,0.517932442643959,-0.158627242603006,-0.0278830605781817,0.566354561911812,0.46
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   706.628035023635
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.62804 (started at 1226.2001)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.760686080706454,0.486744276435673,-0.172908994558533,-0.0685360229968091,0.573736941722052,0.35
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   771.756028431554
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=771.75603 (started at 1264.1231)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.617188373893368,0.545537549477776,-0.117011529515595,0.0141511969121151,0.618479337159388,0.428
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   845.386465180075
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=845.38647 (started at 1293.5893)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717188963048256,0.485941577620192,-0.0120269708144124,0.0162050452678225,0.633223488411987,0.43
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   857.992340234439
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=857.99234 (started at 1288.8022)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.614543154085107,0.488260314189693,-0.128076467895919,0.0179191485004408,0.631965601094014,0.409
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   757.947096196152
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=757.9471 (started at 1267.7093)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.667885492757398,0.453507424136578,-0.141449974707393,0.0773218445173619,0.626895039489207,0.39
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   943.363193760916
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=943.36319 (started at 1359.8388)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.792445186178132,0.534094787530707,-0.0791213287068012,-0.0502954305322449,0.601289497459956,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   629.748761930309
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=629.74876 (started at 1190.6779)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690059428952813,0.465372163778792,-0.0881513971240068,-0.0184132978229806,0.623727579744606,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   685.977363678455
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=685.97736 (started at 1219.1617)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.684689216513845,0.53077982093821,-0.0899770954335793,0.0192188053678879,0.617417429366734,0.41
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   699.293873053025
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=699.29387 (started at 1234.2618)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.695926986062555,0.4642401077778783,-0.0738082347647019,0.0450223362813558,0.6519997011127,0.396
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   742.366071045316
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=742.36607 (started at 1237.087)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668070148241068,0.545882551731747,-0.0338980127715694,0.0206922963385754,0.573261133390169,0.38
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   828.704031058747
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.70403 (started at 1289.3303)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64058962191421,0.522165210515044,-0.135820411759729,0.00877505639271599,0.60718681582487,0.353
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   855.984992069113
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=855.98499 (started at 1304.0155)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.730870752974625,0.535905287462558,-0.115086089579368,-0.0797036746035043,0.578920862897764,0.43
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   773.715854937936
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=773.71585 (started at 1286.0687)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.821135333697308,0.566515678090674,-0.0930377738709663,-0.0736306359881156,0.545074767592981,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   882.555537507049
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=882.55554 (started at 1307.0484)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708978017422467,0.484454323716334,-0.081807363257902,0.0280336105260529,0.606310697259644,0.37
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   861.688059844513
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.68806 (started at 1294.3839)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.712279138897643,0.472005473399478,-0.0473023777622001,-0.00606867066065085,0.624794560570071,0
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   811.249677111109
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.24968 (started at 1271.1003)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.667835294544105,0.497259162668274,-0.102642947266515,0.0292085088684661,0.583428301421909,0.412
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   718.013120776643
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.01312 (started at 1244.5256)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.776148211823108,0.477957541695793,-0.0808565004493837,-0.00116571525168234,0.619262628971791,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   721.641929833934
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=721.64193 (started at 1239.4922)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696022594818889,0.521310135016803,-0.143890739149134,0.0244572587738219,0.573546690618521,0.421
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   741.39284692364
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.39285 (started at 1249.6157)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.747334785005626,0.469596177715094,-0.146642713006986,-0.0278454950944348,0.60129131152121,0.418
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   793.7527713312761
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=793.75277 (started at 1276.9744)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676304210794201,0.50189919831394,-0.061534506383768,-0.0196665740703548,0.613320256741695,0.40
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   758.375935370701
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.37594 (started at 1244.8122)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.703601786871597,0.506819061415419,-0.0888938976151536,0.0283674538692156,0.596297788195982,0.35
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   745.480840265313
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=745.48084 (started at 1234.0191)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.665555667600061,0.520562110537304,-0.104399025910575,-0.0456535404433174,0.541193383302419,0.40
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   879.218985516669
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=879.21899 (started at 1303.4446)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.659304023481272,0.510855892324908,-0.0951681393381338,-0.00304624480681451,0.570279860623274,0.
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
```

```
#>
#>  Lowest minimum so far:   713.767068665155
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=713.76707 (started at 1232.2381)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.623964453936726,0.538956002928939,-0.130977611048268,0.017951863296264 4,0.533324816655176,0.402
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   810.589877162374
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=810.58988 (started at 1295.8227)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741352561272342,0.470302743499166,-0.088884132945029,-0.0378900180057025,0.653905749258198,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   805.718716602953
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=805.71872 (started at 1267.5692)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.732506389063239,0.428151628472143,-0.053403901500066 2,-0.0350866476240597,0.627025855143325,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   805.880437088124
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=805.88044 (started at 1265.0377)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.649910112988786,0.400546429602534,-0.0483449325056152,-0.00821089073043356,0.662312876203614,0
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   749.639553147855
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.63955 (started at 1234.5385)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.663784000175815,0.528200098590094,-0.113204806482609,0.0261182524060055,0.5978119444206,0.3885
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   756.700563528364
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=756.70056 (started at 1246.4515)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.619092587846323,0.475220133846945,-0.136693721168661,0.0384367737270183,0.659557636803355,0.445
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   754.801122620338
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=754.80112 (started at 1278.0876)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.734460503713391,0.480515291227692,-0.0619197688420543,-0.0653749938964085,0.565140770356631,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   734.946620849727
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=734.94662 (started at 1237.5214)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662330751392271,0.438945719827613,-0.0107646756274315,0.0111165653137849,0.591359423322529,0.32
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   777.291138049521
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=777.29114 (started at 1265.6089)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.700342993553798,0.497603144544497,-0.14926312175068,-0.0231170996195362,0.624888123860787,0.404
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   793.282278075967
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=793.28228 (started at 1270.784)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.674660723993665,0.485613119893557,-0.0386786670502685,0.016723111411075,0.614962078510925,0.371
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   780.490732948571
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.49073 (started at 1297.8714)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716465033280017,0.559307878156324,-0.124313321871067,-0.0422768361211832,0.563292385471103,0.42
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   744.6847937727967
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=744.68479 (started at 1265.077)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.683502865521012,0.557644038664126,-0.099904047683449,-0.00802100389815989,0.608660872759096,0.4
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   802.891504569568
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=802.8915 (started at 1274.2474)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.713084498923792,0.470303050901234,-0.195226011805362,-0.0290644297460201,0.629366565022843,0.43
#> Running DTVAR with 21 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   755.443921030994
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=755.44392 (started at 1270.7289)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.769621655336331,0.517578579271514,-0.0764540640167939,-0.0410293163001203,0.583370261666564,0.3
#> Running DTVAR with 21 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 21 parameters
#>
#>  Lowest minimum so far:   835.124892149278
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=835.12489 (started at 1312.6182)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.749524952387577,0.535967263977122,-0.102502126696489,-0.0499275302789386,0.596349763003596,0.39
```

```
#> Test passed
```

```
#> test-external-fitDTVARMx-fit-dt-var-id-mx-psi-full
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   753.5257324525 72
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.52573 (started at 2818.8767)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716436415222463,0.46120650759993,-0.11106142200985,0.00301321978625175,0.627903247442089,0.4260
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   807.021890855762
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.02189 (started at 2588.505)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64436683061265,0.498391235104444,-0.160071888486509,0.0339781657775154,0.60198005547183,0.4384
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   847.919053227647
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=847.91905 (started at 2728.4921)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.65048263248784,0.500831062221385,-0.118198402919168,0.0366494280228962,0.58123942241134,0.4561
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   756.955676893351
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=756.95568 (started at 2854.9595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6942371476662777,0.50819717974084,-0.105624421687433,0.00409527101758858,0.632289504573856,0.450
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   753.509193083176
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.50919 (started at 2812.8936)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655887240667305,0.485802860899086,-0.0839083092806684,0.0298198753046307,0.656184253710193,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   767.581208584653
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.58121 (started at 2522.5355)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.666099793161308,0.464511193536335,-0.0654932498099493,0.0379995747637649,0.576481640152402,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   804.159589781432
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=804.15959 (started at 3214.4662)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.709514848929937,0.512520781234585,-0.0693268366569042,0.0311394034558585,0.614375945693731,0.37
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   827.0353512777773
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=827.03535 (started at 3126.4497)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733415048380763,0.4737216740935777,-0.1732197017387781,-0.0107016860315689,0.62558581948988,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   743.339437745895
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.33944 (started at 2638.9239)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668500573495145,0.511018607197982,-0.0225538430528102,-0.0554278577871591,0.637549001451148,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   847.085842605281
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=847.08584 (started at 3004.5656)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.718837735013316,0.482253589501059,-0.169234127921267,-0.00206947265127682,0.619615644295509,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   798.182952340646
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.18295 (started at 2962.9231)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708600488635298,0.475389955511965,-0.085460399069643 4,-0.0141914891723086,0.629366355717873,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   840.239359125614
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.23936 (started at 3098.1221)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.720830754402489,0.499539299020777,-0.149811076907913,-0.00935615157185998,0.57422226258662,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   715.463286815621
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=715.46329 (started at 2186.5411)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677912107269737,0.431604681250001,-0.166117198698995,-0.0373722186506209,0.594714237261924,0.36
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   773.555575126 71
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=773.55558 (started at 2675.0592)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.610026483067457,0.539202698808136,-0.112586142930668,0.0157509584879128,0.616348520468888,0.423
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   846.578790751943
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=846.57879 (started at 3142.1671)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.691847872543022,0.471764713770405,-0.0106546517322897,0.0247164502125093,0.633220346398059,0.43
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.348041529059
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=868.34804 (started at 2583.8942)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.627985457429941,0.503361278558891,-0.108089115420085,0.0108907733533732,0.592087680278419,0.384
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   760.668650750947
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=760.66865 (started at 2962.0687)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671043139022586,0.449739528055455,-0.143364823394739,0.0767812397406271,0.627634905926179,0.396
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   954.419320076265
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=954.41932 (started at 3332.8123)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.740161996231148,0.486350529941446,-0.0719905629569747,-0.0344391039770904,0.623586895835233,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   631.565117226824
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=631.56512 (started at 2223.8663)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690188935998514,0.46631844387648,-0.08801566889008,-0.0170043240574745,0.624407579707965,0.369
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   692.702283448668
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=692.70228 (started at 2880.1989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674492124834447,0.531806331376248,-0.0838416406291543,0.0241935696660206,0.605847465804013,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   704.124614432298
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=704.12461 (started at 2831.2135)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696273796344007,0.4705632057114 38,-0.0677463248382287,0.0442441501587756,0.64126111655224,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   749.0648718572 15
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.06487 (started at 2617.189)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671672105348793,0.5532240707508 36,-0.0308282180059454,0.0280177530695161,0.57610156309409,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   832.9572153750 91
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=832.95722 (started at 2874.4152)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.640599838610924,0.5218661242733 61,-0.133801927044219,0.00877052889399715,0.607560237452203,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   861.1716465139 74
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.17165 (started at 2735.9084)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7024466110502,0.5272794367298 65,-0.102937783074649,-0.0648383829981922,0.566048462881202,0.415
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   780.388083990028
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.38808 (started at 2818.3029)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.750987741270986,0.515568653282166,-0.0858124045863997,-0.0423866391199023,0.565212590395853,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   884.012316186116
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=884.01232 (started at 3108.7275)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711890555962314,0.492712094353095,-0.0767053671867543,0.0285288982660841,0.592178836717682,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.880098517359
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=868.8801 (started at 2947.4234)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717163956726484,0.483683749390108,-0.0375993797690415,-0.00791624593376094,0.592678138445908,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   819.454253444935
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=819.45425 (started at 2726.9105)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671410883778628,0.495828161311923,-0.106347033551363,0.0223727917334639,0.58429337083662,0.439
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   724.034733274749
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.03473 (started at 2991.6161)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764140813406795,0.470038494719864,-0.080109713438604 3,-0.000442425651481679,0.623075886406732,0
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   725.079200154439
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.0792 (started at 2487.1488)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.69799878896247 4,0.540332218461876,-0.130730262718038,0.021917093189631,0.536314938739927,0.397
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   741.942718148694
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.94272 (started at 2694.1576)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.731765713657343,0.460947222135443,-0.143515721061055,-0.0217064859033288,0.604955165279216,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   796.39568167447
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=796.39568 (started at 2668.9238)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676185407326791,0.501506271339295,-0.061736611790433 4,-0.019148788989216,0.614634619994129,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   769.931496604577
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=769.9315 (started at 2648.519)  (1 attempt(s):  1 valid,
0 errors)
#>  Start values from best fit:
#> 0.706889471784751,0.510958674792209,-0.0872903329879598,0.0314618509851111,0.601647569105036,0.38
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   747.156022212034
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=747.15602 (started at 2244.6977)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.654001704960002,0.510864453765444,-0.101153642056875,-0.0416413960636243,0.545366507859859,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   882.881817268468
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=882.88182 (started at 2694.2373)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664263573300725,0.510259310240862,-0.101706055736383,-0.00135421886135303,0.569389311889082,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   719.294592452257
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=719.29459 (started at 2203.3335)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.611369817670824,0.524445199031561,-0.124102198479103,0.0219054133021689,0.542066359773609,0.395
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   811.165066118919
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.16507 (started at 3110.0582)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741715278223738,0.469386839421521,-0.087911341498182,-0.0380941832178262,0.654375832276698,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   811.70332993416
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.70333 (started at 2666.7364)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.693236961960978,0.409760379952362,-0.0515540037282645,-0.0206192926676925,0.635629426358448,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   815.700637309489
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=815.70064 (started at 2295.3086)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643558774321743,0.397803453713946,-0.0391462779462435,-0.00811994515678317,0.662033654346106,0
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   751.628548117406
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.62855 (started at 2484.7537)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6640940579773 61,0.531039768082628,-0.106946643085385,0.0260204915877746,0.584316984862053,0.378
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   765.695649763963
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=765.69565 (started at 2540.8022)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624782040432687,0.480391243558771,-0.141774241220355,0.0410356454946573,0.634197342175 64,0.4442
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   765.506906141828
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=765.50691 (started at 2411.4559)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744362247730579,0.466000664481607,-0.069349338007458,-0.0676861693133684,0.568591816257574,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   738.535430579731
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=738.53543 (started at 2324.9388)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662192005125345,0.438486701827505,-0.0111805116228224,0.0119839705264638,0.594386140604135,0.32
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   779.219889369411
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.21989 (started at 2722.6984)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69034389691048,0.490260318654998,-0.14634594417869,-0.0195661764759828,0.627471517944632,0.4030
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   797.337555445124
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.33756 (started at 2724.6975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.679540559837914,0.477660142813054,-0.0378213601801239,0.0155174575977354,0.616832717935434,0.37
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   786.461409258482
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=786.46141 (started at 2825.0508)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.716083270816913,0.554192922595806,-0.123048503581535,-0.0417163648361636,0.571856335180358,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.491237693379
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.49124 (started at 2890.0689)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.661258618775645,0.532531164387958,-0.101653621291143,0.00194807267016532,0.614525197221424,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   807.229141174741
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.22914 (started at 2653.0473)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711543203628796,0.486743640658324,-0.182172323758709,-0.0261170676048986,0.599277356957442,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   762.74606543844
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=762.74607 (started at 3168.4061)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771335696115137,0.515804519283412,-0.0882914931561921,-0.0395714777150414,0.579340252513826,0.3
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   837.387110472529
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=837.38711 (started at 3078.7657)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746062168737616,0.531524328374897,-0.100212184075212,-0.0484581160708526,0.598238209677157,0.3
#> Test passed
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   753.525732452556
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.52573 (started at 767.23983)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716436390682026,0.461206479455504,-0.111061379787523,0.0030132264079104,0.627903218328769,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   807.021890855755
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.02189 (started at 819.93175)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.644366793188742,0.498391198593837,-0.160071888293784,0.0339782105103452,0.601980079409444,0.43
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   847.919053227644
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=847.91905 (started at 866.15931)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.650482647114877,0.500831083597165,-0.118198399837826,0.0366494412099027,0.58123941401327,0.456
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   756.955676893345
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=756.95568 (started at 772.80857)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.694237162178642,0.508197186581156,-0.105624427881956,0.0040952688312779,0.632289505046,0.45020
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   753.509193083072
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.50919 (started at 771.21109)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.65588724488325,0.485802960120283,-0.0839084007874325,0.0298198891170515,0.656184258707664,0.385
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   767.58120858461
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.58121 (started at 783.11641)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.666099887014264,0.464511128130109,-0.0654932201853335,0.0379995404285138,0.57648173062466,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   804.159589781426
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=804.15959 (started at 815.15868)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.70951485881902,0.512520816663012,-0.0693267786022447,0.0311394047336333,0.614375939678389,0.379
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   827.035351277667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=827.03535 (started at 841.57206)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733415043702801,0.473721546842199,-0.173219833196819,-0.0107016991520161,0.625585842241969,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   743.339437745896
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.33944 (started at 764.8049)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668500572085409,0.5110186220072907,-0.0225538370995188,-0.0554278644766949,0.637548988926908,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   847.085842605272
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=847.08584 (started at 861.62867)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.718837721855379,0.482253548068668,-0.169234124031418,-0.00206947278182343,0.619615680888378,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   798.182952340645
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.18295 (started at 805.58759)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708600485096219,0.475389970974243,-0.085460402431063 4,-0.0141914833941467,0.629366341929125,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   840.239359125587
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.23936 (started at 851.00179)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.720830653827444,0.499539260138973,-0.149811068950961,-0.00935609960920493,0.574222230687676,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   715.463286815619
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=715.46329 (started at 741.63598)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677912113042656,0.431604678276107,-0.166117191309574,-0.03737222077553888,0.59471424284018,0.362
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   773.555575126712
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=773.55558 (started at 793.31737)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.610026453855919,0.539202693508786,-0.112586162753446,0.0157509527099102,0.616348515146169,0.423
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   846.578790751875
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=846.57879 (started at 870.41089)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.691847754051944,0.471764624088465,-0.0106547352992652,0.0247164077337403,0.633220378999821,0.43
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.348041529014
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=868.34804 (started at 882.368)  (1 attempt(s):  1 valid,
0 errors)
#>  Start values from best fit:
#> 0.627985431859083,0.503361113879496,-0.108089109362885,0.0108907849576918,0.592087668353899,0.382
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   760.668650750786
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=760.66865 (started at 784.80812)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671043294553344,0.449739610191639,-0.143364882616331,0.0767811422573739,0.627634877009767,0.396
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   954.419320076268
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=954.41932 (started at 976.21158)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.740161982974225,0.486350533145574,-0.0719905732255367,-0.0344391023992019,0.623586898319844,0.4
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   631.565117226805
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=631.56512 (started at 649.09008)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690188912052465,0.466318339589718,-0.0880157258698881,-0.0170043389544778,0.624407608247188,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   692.702283448623
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=692.70228 (started at 706.63832)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674492176718318,0.531806306850468,-0.083841594038027,0.0241936143699129,0.605847520082124,0.402
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   704.124614432279
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=704.12461 (started at 719.7453)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696273761145531,0.470563186562225,-0.067746332018030 4,0.0442441930269252,0.641261156621913,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   749.064871857162
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.06487 (started at 759.7683)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6716720576288 69,0.553224033210853,-0.0308282016035504,0.0280177441410609,0.57610155566919,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   832.957215375085
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=832.95722 (started at 845.53725)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.640599852435438,0.521866132269368,-0.133801902986809,0.00877055413846116,0.607560239317985,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   861.171646513923
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.17165 (started at 880.21941)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.702446773174686,0.527279414132156,-0.102937825492937,-0.0648384230982519,0.566048491953186,0.41
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   780.388083990028
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.38808 (started at 802.16016)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.750987754707508,0.515568660401431,-0.0858123984972097,-0.0423866507955996,0.565212588448283,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   884.012316186061
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=884.01232 (started at 891.24522)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711890626125587,0.492712171335319,-0.0767053662610936,0.0285288078409419,0.592178738172141,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.880098517314
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=868.8801 (started at 879.61589)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71716396593145,0.48368365260687,-0.0375995049545879,-0.00791630490751933,0.592678156135992,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   819.454253444913
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=819.45425 (started at 836.69057)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671410923781904,0.495828176881161,-0.106347089887858,0.0223726872079972,0.58429337314242,0.439
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   724.03473327474
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.03473 (started at 743.57505)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764140816904933,0.470038558540764,-0.0801097355457075,-0.00044243769572461 9,0.62307586307039,0
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   725.079200154421
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.0792 (started at 742.41338)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.697998901485675,0.540332228962624,-0.13073017842312,0.0219170433366418,0.536314923021703,0.397
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   741.942718148673
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.94272 (started at 756.40648)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.731765756698328,0.460947242378166,-0.143515722898899,-0.0217064958063703,0.60495515483314,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   796.395681674471
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=796.39568 (started at 806.83396)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676185418118704,0.501506267894337,-0.0617366079373675,-0.019148785246656,0.614634622254953,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   769.931496604557
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=769.9315 (started at 784.17806)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706889523738641,0.510958751213881,-0.0872903029555143,0.0314618440317098,0.601647603879526,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   747.156022212031
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=747.15602 (started at 762.66042)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.654001707396025,0.510864481151734,-0.101153647245839,-0.041641397487621,0.54536651804121,0.399
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   882.88181726846
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=882.88182 (started at 899.62257)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664263630752343,0.510259320356062,-0.101706066044697,-0.00135424081986313,0.56938933434984,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   719.294592452244
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=719.29459 (started at 751.84398)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.611369834006924,0.524445251342304,-0.124102221494647,0.0219054135945505,0.542066330904429,0.395
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   811.165066118911
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.16507 (started at 825.67386)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741715338593877,0.469386888597785,-0.0879113501672059,-0.0380942105930804,0.654375787937546,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   811.703329934087
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.70333 (started at 829.66831)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.693236804904483,0.409760407814236,-0.051554137583411,-0.0206193626859744,0.635629448221496,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   815.700637309486
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=815.70064 (started at 838.4595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643558786845639,0.397803426472942,-0.0391462577470995,-0.00811991823502146,0.662033636068717,0
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   751.628548117381
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.62855 (started at 760.05983)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664094116312167,0.53103976530966,-0.106946597515043,0.0260203877281854,0.584316966099768,0.3782
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   765.695649763953
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=765.69565 (started at 777.65895)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624782027530613,0.480391224437227,-0.141774212466561,0.0410357031088461,0.634197385167903,0.44
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   765.506906141818
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=765.50691 (started at 784.45062)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744362260717956,0.46600071768367,-0.0693493469896016,-0.0676862012782647,0.568591816185557,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   738.535430579709
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=738.53543 (started at 755.42182)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662192044590318,0.438486719931676,-0.011180434682371,0.0119838904048929,0.594386115716456,0.328
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   779.219889369408
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.21989 (started at 791.00989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690343893329731,0.490260337520905,-0.146345936445548,-0.0195661690359057,0.627471528541765,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   797.337555444837
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.33756 (started at 803.52761)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.679540698246817,0.477660220092071,-0.037821410970492 5,0.0155172854832644,0.61683286487842,0.37
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   786.46140925848
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=786.46141 (started at 800.57952)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716083293302515,0.55419292826518,-0.123048540046494,-0.0417163759299722,0.57185633793225,0.423
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.491237693354
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.49124 (started at 761.5739)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.661258571859748,0.532531156388684,-0.1016535905083,0.00194805149038873,0.614525235014744,0.398
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   807.22914117474
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.22914 (started at 816.98743)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711543187543978,0.486743654967196,-0.182172327782474,-0.0261170698772137,0.599277367182826,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   762.746065438398
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=762.74607 (started at 787.98087)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7713357927142 79,0.515804570638 15,-0.0882914532265591,-0.0395715578177108,0.579340197688663,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   837.387110472529
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=837.38711 (started at 847.96006)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746062141684281,0.531524331744801,-0.100212171784246,-0.0484581074240736,0.598238213495439,0.3
```

```
#> Test passed
```

```
#> test-external-fitDTVARMx-fit-dt-var-id-mx-theta-diag
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   759.332723034262
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.33272 (started at 2229.3757)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716461575521197,0.461130100802105,-0.111058090094956,0.00301995673602239,0.627962413370496,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   806.575163455545
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=806.57516 (started at 2098.6642)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64204086278048,0.467879985082402,-0.179936123375178,0.038191035386491,0.651193254454728,0.47331
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   851.056191919859
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 2172.2392)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.65080426396324,0.500936247320838,-0.117869947772502,0.0358583652591551,0.581033122377913,0.4552
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   758.921960412823
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.92196 (started at 2247.5487)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.694145746890428,0.508146637865246,-0.105080329959906,0.00427982530120859,0.632528531337436,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   753.7733697383772
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.77337 (started at 2226.3377)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655842218231035,0.483039013437021,-0.0853657740340181,0.0286605704501393,0.663899896562032,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   767.578383629611
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.57838 (started at 2066.7412)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.684743384462473,0.477525888169968,-0.0652716256732445,0.0313005875194642,0.571829423136666,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   807.284247508601
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.28425 (started at 2447.0804)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.709501718839496,0.51250236281866,-0.0675568142351002,0.030951783780733,0.614126445007679,0.3723
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   828.417185355633
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.41719 (started at 2396.895)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.73341404846121,0.470583172154503,-0.172979545706 73,-0.0109162468529593,0.630609457212824,0.3969
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   745.584294111448
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=745.58429 (started at 2129.414)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668377704959284,0.51147490422647,-0.0202885525399023,-0.055357002601867,0.637384733444228,0.373
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   850.9253307 76681
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.92533 (started at 2328.0718)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7299721578150 89,0.490432428487342,-0.17046779276472,-0.00613817974515806,0.618063077674825,0.43
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   798.45111927568
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.45112 (started at 2308.0631)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708648962619358,0.4709374902352 25,-0.0862511076813548,-0.0138805854507292,0.639025153487826,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   839.73204053899
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=839.73204 (started at 2378.7879)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.740034836138116,0.508377738538455,-0.158459311087499,-0.0161868971160293,0.576763499697423,0.46
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   712.215688114583
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=712.21569 (started at 1883.2835)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744860875994863,0.472870298291921,-0.169316538303039,-0.063055658489828,0.578591627086292,0.355
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   779.322833282627
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.32283 (started at 2148.3924)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.610151003814524,0.533415816372607,-0.11824102654331,0.0151964593258026,0.630268837659865,0.4338
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   849.69783699305
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=849.69784 (started at 2403.5612)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6920942377780975,0.459600977375994,-0.0182040709098567,0.0234594987582832,0.658352601838684,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   870.890622415906
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=870.89062 (started at 2095.0482)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.630489207915276,0.489936472946584,-0.116365063730334,0.0118055807684063,0.620690127156141,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.234298031337
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.2343 (started at 2310.0413)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6739417867727O9,0.451766638156356,-0.14430031377606,0.0753488546483778,0.626701867582S3,0.39720
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   957.4274414678
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=957.42744 (started at 2503.6656)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.760141350146887,0.497336252423846,-0.0725490859359169,-0.0416536041946392,0.619434230715362,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   632.875161889397
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=632.87516 (started at 1906.4761)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69007965146927,0.46245751804421,-0.0899624123009421,-0.0167572402098592,0.631846456054017,0.373
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   692.427956002855
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=692.42796 (started at 2265.956)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.700816913814251,0.544239217390487,-0.0894915514165145,0.0126419784573903,0.611704901621403,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   706.366119321255
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.36612 (started at 2239.7701)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.695839723477225,0.46472885224069,-0.0706130554448589,0.0449906504025278,0.652575055342615,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.404839751116
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.40484 (started at 2117.0926)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671664907425407,0.55318957973945,-0.0308056702025283,0.0276011917548705,0.576781769617635,0.37
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   833.811847930303
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81185 (started at 2258.2304)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.642734460855169,0.523793632708228,-0.134213371696794,0.00796257714350268,0.606850173130265,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   861.323094690084
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.32309 (started at 2178.3975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.735514792218746,0.539561468705758,-0.114808084367438,-0.0797856949383179,0.579642928478459,0.43
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   781.206069012818
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=781.20607 (started at 2225.8175)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.78284760823875,0.534658366721048,-0.0883641296453627,-0.0573438796729957,0.556312439863145,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   885.36740121005
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.3674 (started at 2385.7275)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711775849305337,0.490550041984008,-0.0779880750755153,0.0286428530811266,0.59633188567126,0.36
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.505867589922
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=868.50587 (started at 2296.2083)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717055213946889,0.471028121408582,-0.0418106006409843,-0.00748161508354662,0.619887650152528,0
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   821.19776646439
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=821.19777 (started at 2174.2644)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6700868749777929,0.492580715111334,-0.100642980367104,0.0257867550069012,0.590105916259891,0.41
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   727.944185494791
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=727.94419 (started at 2324.5758)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.763019639463508,0.471127925169827,-0.0768763964252849,0.00279771004277369,0.626375263559661,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   724.362924720719
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.36292 (started at 2045.8485)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.697188927121504,0.520043885826835,-0.144587832628856,0.0232773578642814,0.571287462832766,0.420
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   742.906028120223
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=742.90603 (started at 2162.7862)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.740258375592134,0.465558235783057,-0.14373881114532,-0.0252277480397728,0.602761788253299,0.41
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   797.484023499049
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.48402 (started at 2143.5016)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.676277606733817,0.501583782268018,-0.0618799133664132,-0.0193574359741472,0.614583018656662,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   766.575208661036
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=766.57521 (started at 2135.0557)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706698526045207,0.51074971206244,-0.089803275218297,0.0336899049312096,0.602806025646738,0.357
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   749.349505885142
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.34951 (started at 1911.4686)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.653912558677998,0.510585995096145,-0.100988534775026,-0.0413977061430136,0.545606868396408,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   889.183458248158
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.18346 (started at 2154.5893)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664379053783866,0.510280151693526,-0.0987370952318672,-0.00146945860934262,0.568846397397242,0
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   724.168558489231
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.16856 (started at 1889.3562)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.654046197131038,0.563554256678825,-0.137360951266441,0.00744730235297006,0.529154684415908,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   812.05425774453
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.05426 (started at 2389.0484)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.74690803382656,0.472837183765252,-0.0883688986039327,-0.0404167118878994,0.65314348318347,0.374
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   811.512604041679
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.5126 (started at 2144.8002)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.739028843552582,0.431069623239479,-0.0462031796417602,-0.0387743493697862,0.628542063711434,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   818.14441843131
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=818.14442 (started at 1939.0374)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643440689941413,0.394425724915292,-0.043013115612467 4,-0.00769139207440101,0.671201359953199,0
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   751.662352048066
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.66235 (started at 2044.3254)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.663633752307167,0.522334527453896,-0.114397250807944,0.0268506978928804,0.600435128192096,0.390
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.999567741 73
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.99957 (started at 2074.7797)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.625063434413151,0.472195002990695,-0.141339344507948,0.0406453150998842,0.64972395989459,0.437
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   768.771638801627
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 2004.5256)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744387048658098,0.465936319169119,-0.0692204812121617,-0.067625434317398,0.568648239016455,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   741.223147927199
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 1960.8679)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662178986606254,0.438474896341751,-0.0111441925900123,0.0120288350962392,0.594398336541729,0.32
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   780.385157054497
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.38516 (started at 2175.7975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.713267805261913,0.506186719101421,-0.151924512693277,-0.0274707095069332,0.624141932476995,0.40
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   798.994200370789
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 2177.0374)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.679564039033337,0.477657713021943,-0.037910142021164 7,0.0154876012439871,0.616824922782552,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   787.032257794068
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 2228.0785)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716093128499543,0.554203787207634,-0.123075956657834,-0.04176985988102,0.571815562071364,0.423
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.579916498107
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.57992 (started at 2268.5273)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.685706333266576,0.551297827577568,-0.106731549565384,-0.00624268828544698,0.607956888473743,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   806.520062595804
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=806.52006 (started at 2135.2237)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.712756518281646,0.474138232688571,-0.190220552268146,-0.0284035086483672,0.622511768652749,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.768889133337
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.76889 (started at 2421.1065)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771947411218063,0.515368495840845,-0.074273682960108,-0.041848997217317,0.582032587892082,0.337
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   838.428693478898
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=838.42869 (started at 2367.2177)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746723049029146,0.532030786145634,-0.100660956420024,-0.0488513503547325,0.598473259529766,0.38
```

```
#> Test passed
```

```
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   759.332723034344
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.33272 (started at 1269.463)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
```

```
#> 0.716461758437843,0.461130191666003,-0.111058148174027,0.0030200041261131,0.627962448123618,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   806.575163455561
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=806.57516 (started at 1263.8017)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.642040842337781,0.467879957302954,-0.179936110124873,0.0381910451593652,0.651193248152161,0.47
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   851.056191919859
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 1283.4513)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.650804222894663,0.500936251593524,-0.117869952112375,0.0358583811672622,0.581033146790623,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   758.9219604127 71
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.92196 (started at 1280.9902)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.694145815275769,0.508146615679182,-0.105080283215847,0.00427986204525697,0.632528520372581,0.4
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   753.773369738395
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=753.77337 (started at 1245.9536)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655842156758283,0.483039090838455,-0.0853657352734665,0.0286605631286008,0.663899878277403,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   767.578383629565
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.57838 (started at 1248.7605)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.684743460532873,0.477525955966706,-0.0652716091687147,0.0313006708108778,0.571829336502837,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   807.28424750855
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.28425 (started at 1279.8614)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.709501676634885,0.512502336636108,-0.0675568762412412,0.0309518226132435,0.61412652133169,0.372
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   828.417185355646
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.41719 (started at 1289.1724)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733414061595624,0.470583170924404,-0.172979577245718,-0.0109162070811166,0.630609483549607,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   745.584294109788
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=745.58429 (started at 1249.7777)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668377630542745,0.511475453164255,-0.0202885565842843,-0.0553563932536087,0.637384992680389,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   850.9253307776764
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.92533 (started at 1303.4348)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.729972045455 51,0.490432211586737,-0.17046788030684,-0.00613823680017927,0.61806314672304,0.431
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   798.4511192775729
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.45112 (started at 1269.6943)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708648889982693,0.470937476916329,-0.086251203613564 7,-0.0138805315368036,0.639025147886761,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   839.732040538987
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=839.73204 (started at 1290.7195)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.74003483820895,0.5083777713971286,-0.158459314047424,-0.0161868870396697,0.576763518829339,0.46
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   712.215688114525
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=712.21569 (started at 1226.2001)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744860701014166,0.472870266244513,-0.169316517262399,-0.0630555881649142,0.578591632722 96,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   779.322833282548
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.32283 (started at 1264.1231)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.610151148501048,0.533415877751536,-0.11824109516717,0.0151965015019173,0.630268727025805,0.433
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   849.697836992959
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=849.69784 (started at 1293.5893)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.692094399142155,0.459600871471704,-0.0182040496789536,0.0234592932653013,0.658352817424359,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   870.890622411543
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=870.89062 (started at 1288.8022)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.630488374538645,0.489936220830775,-0.116364215310398,0.0118056079519682,0.620689464637226,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.234298031323
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.2343 (started at 1267.7093)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.673941710440566,0.451766625528361,-0.144300351576307,0.0753489277392367,0.626701848734124,0.39
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   957.427441467686
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=957.42744 (started at 1359.8388)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.760141482189062,0.497336200005095,-0.0725490027676362,-0.0416536352150075,0.619434209641242,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   632.87516188937
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=632.87516 (started at 1190.6779)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690079549161334,0.462457536133155,-0.0899623898138986,-0.0167572036207578,0.631846373260565,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   692.427956002861
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=692.42796 (started at 1219.1617)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.700816788829819,0.544239347208657,-0.0894915125776793,0.0126420799051425,0.611704700767452,0.4
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   706.366119321263
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.36612 (started at 1234.2618)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.695839752666626,0.464728884339015,-0.0706130746570692,0.044990628142973,0.652575108016369,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.404839750736
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.40484 (started at 1237.087)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67166478123484,0.553189625146978,-0.0308057222342839,0.027601250168,0.576781801604953,0.379717
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   833.811847930206
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81185 (started at 1289.3303)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.642734284602601,0.523793567581215,-0.134213340626304,0.00796268230460696,0.606850260704215,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   861.323094690067
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=861.32309 (started at 1304.0155)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.735514770599l6,0.539561436011556,-0.114808112124893,-0.0797858042651696,0.579642890288922,0.433
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   781.20606901283
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=781.20607 (started at 1286.0687)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.782847715394805,0.53465836808526,-0.0883641074876594,-0.0573440036279908,0.556312477257739,0.45
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   885.367401210055
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.3674 (started at 1307.0484)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7117758963236,0.490550024940013,-0.0779880939698595,0.0286428520839387,0.596331891435639,0.3679
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   868.505867589902
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=868.50587 (started at 1294.3839)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71705511546391,0.471028051058085,-0.0418105425018051,-0.00748158165279561,0.619887707362907,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   821.1977664644
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=821.19777 (started at 1271.1003)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.670086899102041,0.492580629728582,-0.100643002593687,0.0257867517905107,0.590105970322189,0.419
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   727.944185494788
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=727.94419 (started at 1244.5256)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.763019650732731,0.47112792908743,-0.0768764169465705,0.00279768013035594,0.626375292168206,0.34
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   724.3629247207l3
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.36292 (started at 1239.4922)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.697188961069481,0.520043902702995,-0.144587817715342,0.0232773272980057,0.571287405624845,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   742.906028120171
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=742.90603 (started at 1249.6157)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.740258300099922,0.46555819622903,-0.143738757844071,-0.0252277624228367,0.602761852332509,0.41
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   797.484023499131
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.48402 (started at 1276.9744)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676277713699807,0.501583709604157,-0.0618798834683327,-0.0193573872650549,0.614583091327375,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   766.575208661055
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=766.57521 (started at 1244.8122)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.706698494843894,0.51074968535068,-0.089803324021924 9,0.0336899557199775,0.602806060946354,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   749.349505885155
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.34951 (started at 1234.0191)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.653912535069556,0.510585935629446,-0.10098852974448,-0.0413977124000361,0.545606924108695,0.398
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   889.183458248218
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.18346 (started at 1303.4446)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664379071157356,0.510280179529679,-0.098737095965046,-0.00146959616917592,0.568846343690379,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   724.168558489256
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=724.16856 (started at 1232.2381)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.654046178119208,0.563554144888112,-0.137360940407508,0.00744732378414449,0.529154762675578,0.39
#> Running DTVAR with 15 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   812.054257744494
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.05426 (started at 1295.8227)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746907951395072,0.472837085832296,-0.088368945570211,-0.040416662942460 4,0.653143519790933,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   811.512604041678
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.5126 (started at 1267.5692)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.739028935478103,0.431069625155677,-0.0462031899547762,-0.038774357048488,0.628542083591703,0.38
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   818.144418431308
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=818.14442 (started at 1265.0377)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643440690103258,0.394425714366549,-0.0430131135159192,-0.00769139276849248,0.671201341943623,0.
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
```

```
#>
#>  Lowest minimum so far:   751.662352048059
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.66235 (started at 1234.5385)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.66363383709128,0.522334475017155,-0.11439713726238,0.0268506945454028,0.600435204251913,0.39083
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.9995677741745
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.99957 (started at 1246.4515)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.625063516993732,0.472194995509425,-0.14133929826262,0.0406452195956692,0.649723946790513,0.4378
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   768.771638793144
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 1278.0876)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7443868777775468,0.465935504807415,-0.069218975419667,-0.0676241546377264,0.568648834523172,0.35
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   741.2231479272245
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 1237.5214)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662179016367172,0.438475014935734,-0.0111442398981491,0.0120288030331276,0.594398281096874,0.32
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   780.3851570527O9
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.38516 (started at 1265.6089)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7132688127267O2,0.5061880811591,-0.151924519970821,-0.027470887463725З,0.624141238697565,0.4062
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   798.994200370797
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 1270.784)  (1 attempt(s):  1 valid,
0 errors)
#>  Start values from best fit:
#> 0.679564011450766,0.477657712458193,-0.037910129689108,0.0154875683749217,0.616824909978278,0.370
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   787.032257794073
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 1297.8714)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716093126762651,0.554203776621668,-0.123075969534599,-0.041769844153819,0.571815554554838,0.423
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   750.579916498102
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.57992 (started at 1265.077)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.685706307831887,0.551297808278873,-0.106731596207885,-0.0062427481969548 4,0.607956900875783,0.4
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   806.520062595823
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=806.52006 (started at 1274.2474)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.712756511335722,0.474138255239102,-0.190220505042505,-0.0284035670469025,0.622511820552135,0.42
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   764.768889133334
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.76889 (started at 1270.7289)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.771947428062622,0.515368485130007,-0.0742736679019981,-0.0418490061426828,0.582032595950792,0.3
#> Running DTVAR with 15 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 15 parameters
#>
#>  Lowest minimum so far:   838.428693478879
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=838.42869 (started at 1312.6182)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746723106040598,0.532030839778084,-0.100661085528115,-0.0488513654349201,0.598473252869153,0.38
```

```
#> Test passed
```

```
#> test-external-fitDTVARMx-fit-dt-var-id-mx-theta-null
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   759.332723034266
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.33272 (started at 2818.8767)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716461594268781,0.461130103434526,-0.111058104052503,0.00301990065158215,0.627962466371071,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   811.221283431467
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.22128 (started at 2588.505)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.644376822379958,0.498319862422355,-0.160138757853946,0.0339457523281381,0.602025055582 71,0.438
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.056191919888
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 2728.4921)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.650804152587558,0.500936223533729,-0.117869966244044,0.0358584466671872,0.581033255621994,0.455
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   758.939240001087
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.93924 (started at 2854.9595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.694252482747568,0.508254712117 76,-0.105604057104861,0.00403646757951646,0.632271243648902,0.450
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   755.237014820988
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=755.23701 (started at 2812.8936)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655922071168991,0.485798776878 36,-0.0839744194072475,0.0298173300980825,0.656191959996754,0.385
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.863852470668
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.86385 (started at 2522.5355)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6661111148917,0.464519076919049,-0.0655319370278874,0.0379815425135491,0.576484188972957,0.401
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.608080756468
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.60808 (started at 3214.4662)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7095130550531,0.512499712173206,-0.0692805896211676,0.0311077019364299,0.614389046595127,0.379
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   828.951705065187
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.95171 (started at 3126.4497)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733264788863225,0.473562971107431,-0.173022757515241,-0.0104990839461825,0.625703544856902,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   746.033688503384
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=746.03369 (started at 2638.9239)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668484301092742,0.51138621629638,-0.0225537318120472,-0.0555161115431583,0.637385379142246,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.374280350207
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.37428 (started at 3004.5656)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.718825722836537,0.48235380270807,-0.169307336880467,-0.00202819864122296,0.619552406230925,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   799.274821858165
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.27482 (started at 2962.9231)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708588261228634,0.475388229135813,-0.0854309590011715,-0.0141769414286767,0.629365493947916,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   840.483916141231
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.48392 (started at 3098.1221)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.720735518069381,0.499551991405701,-0.149780544748022,-0.00930202643115042,0.574215681169346,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   718.539233542402
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.53923 (started at 2186.5411)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677880341672318,0.431826450749655,-0.166188298322661,-0.0373797352663127,0.594622543905395,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   779.766644444407
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.76664 (started at 2675.0592)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6099716467191 75,0.539347777450201,-0.112605660413882,0.0157158111595143,0.616305811402161,0.424
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   850.752343563444
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.75234 (started at 3142.1671)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.691623804012226,0.471544485897595,-0.0100294723327233,0.0250565521854465,0.633323731032243,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   872.34306757139
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=872.34307 (started at 2583.8942)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.627986746606938,0.50335892249985,-0.108103630273034,0.0109464645923342,0.592093464791283,0.3841
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   764.239047454334
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.23905 (started at 2962.0687)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67105294053085,0.449887649000752,-0.143458815256208,0.0768224346437029,0.627515746666162,0.3968
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   957.924375737505
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=957.92438 (started at 3332.8123)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.739922346378846,0.485927042232824,-0.0717538017632368,-0.0342026956014292,0.6240774938083,0.409
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   633.011904428566
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=633.0119 (started at 2223.8663)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690213513068111,0.466362670344152,-0.0879599163745913,-0.0170226181885829,0.624374818924666,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   694.317115186718
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=694.31712 (started at 2880.1989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674456574145247,0.531884168814988,-0.0838788035112604,0.0242219856483305,0.605791688734476,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   706.595319003195
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.59532 (started at 2831.2135)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696198361443529,0.47033350806689,-0.0677346577381333,0.0443111669122736,0.641500229796633,0.381
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   750.698512473323
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.69851 (started at 2617.189)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671673577610027,0.553223041143065,-0.0309216980368968,0.027945584674691,0.576180619805424,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   833.816258681054
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81626 (started at 2874.4152)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.64049956448 3478,0.521837363160335,-0.133809910294518,0.00875136386287813,0.60751373070868,0.35
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   863.215725480729
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=863.21573 (started at 2735.9084)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.702336925380831,0.526763645809178,-0.103029422372 39,-0.0646796395406807,0.566209899448809,0.41
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   782.276989787587
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=782.27699 (started at 2818.3029)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.751079842826758,0.515348162651717,-0.0856261602381017,-0.0423177565833913,0.565376921520485,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   885.400081850406
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.40008 (started at 3108.7275)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711902034855524,0.492753831090941,-0.0766983681358221,0.0284133659575973,0.592131565493811,0.36
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   870.776467535204
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=870.77647 (started at 2947.4234)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717342945794694,0.483864010973883,-0.0377741740801736,-0.00846860357385741,0.59273073403503,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   825.091328764683
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=825.09133 (started at 2726.9105)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671378784761566,0.495755549187164,-0.106318495635697,0.0223503756046088,0.58423655700464,0.439
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   732.6579075079 78
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=732.65791 (started at 2991.6161)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764032648283235,0.471287001814766,-0.082229982090093,-0.00101245837563025,0.622298962927359,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   726.376014908232
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=726.37601 (started at 2487.1488)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.698020505561103,0.540256679924573,-0.130671049333998,0.0219015717434524,0.536368805316912,0.39
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   743.06253438225
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.06253 (started at 2694.1576)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.731754835793631,0.460965075767634,-0.1434716820242,-0.0216993813992399,0.6049383953541,0.42084
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   797.484023499137
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.48402 (started at 2668.9238)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6762776947936l7,0.5015837717078l3,-0.06187973035375,-0.0193575825688431,0.614583065520855,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   770.977494676037
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=770.97749 (started at 2648.519)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706895800327194,0.5110105778881l9,-0.0872678711618278,0.0314694503916333,0.601610168470179,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   749.349505885161
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.34951 (started at 2244.6977)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.653912522999667,0.510586048106383,-0.100988573067708,-0.0413976764995652,0.545606806035989,0.39
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   889.8616765020777
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.86168 (started at 2694.2373)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664289371279109,0.510244936756276,-0.101676667621902,-0.00118367999328859,0.569508402437711,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   725.595924157009
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.59592 (started at 2203.3335)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.611388349409092,0.524511358890167,-0.124184584243865,0.0219294400932992,0.542040604736846,0.395
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   812.090920433365
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.09092 (started at 3110.0582)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741751912941588,0.469320559388466,-0.0879921988685319,-0.0380914370049528,0.654436793094238,0.3
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   815.197848341689
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=815.19785 (started at 2666.7364)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.6932274607788832,0.409815304298299,-0.05145722116177755,-0.0205940886660018,0.6355977773482195,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   820.593168415493
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=820.59317 (started at 2295.3086)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643304825135551,0.397856735560794,-0.038646819321803 4,-0.00783303145434867,0.661822704299331,0
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   752.466226469855
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=752.46623 (started at 2484.7537)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664098311347438,0.53099071164222,-0.106972800626957,0.0260199511752171,0.584333638614264,0.3782
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   766.219955415809
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=766.21996 (started at 2540.8022)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624786762223102,0.480327062303527,-0.141720219803405,0.0410521888955309,0.634241889450656,0.44
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   768.771638793145
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 2411.4559)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744386847205346,0.465935456534318,-0.0692189873376725,-0.0676241295919464,0.568648772015181,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   741.223147927192
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 2324.9388)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662178853621 91,0.438474928833818,-0.011144207357192,0.0120288807502441,0.594398291774759,0.328
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   780.836285441667
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.83629 (started at 2722.6984)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.690347402204549,0.490311341041875,-0.146390022374425,-0.0195401602514742,0.627402518041284,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   798.994200370794
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 2724.6975)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.679564030022408,0.477657702995945,-0.037910120568797,0.0154876263593496,0.616824927873006,0.37
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   787.032257794103
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 2825.0508)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716093080348548,0.554203770132493,-0.123075968768171,-0.0417698302704187,0.571815555828147,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   751.084607795309
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.08461 (started at 2890.0689)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.66130950231391,0.532629819541967,-0.101641409043792,0.00192165906897013,0.614479809469556,0.398
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.680486764465
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.68049 (started at 2653.0473)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711536873275276,0.486718967297324,-0.182176023621629,-0.0261125305270112,0.599294484813252,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.418593752537
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.41859 (started at 3168.4061)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771433701226941,0.515790796170361,-0.0891381959878861,-0.0397577895392098,0.579395644538703,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   838.480905826361
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=838.48091 (started at 3078.7657)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.746043240966985,0.531610392262968,-0.101115749197125,-0.0485678713783249,0.598258784644551,0.3
```

```
#> Test passed
```

```
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   759.332723034257
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=759.33272 (started at 767.23983)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.716461585428167,0.461130087272103,-0.111058101747436,0.00301995000147525,0.627962429370563,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   811.221283431381
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=811.22128 (started at 819.93175)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.644376917883203,0.498319815027411,-0.160138649888563,0.0339457279840114,0.602025160800339,0.438
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   851.056191919858
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.05619 (started at 866.15931)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
```

```
#> 0.650804232121634,0.500936239033408,-0.117869944184811,0.0358583580157441,0.581033136227764,0.455
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   758.939240001087
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=758.93924 (started at 772.80857)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69425247833575,0.508254712519871,-0.105604056657861,0.00403646721373456,0.632271246543257,0.450
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   755.237014820981
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=755.23701 (started at 771.21109)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.655922064526889,0.485798758415577,-0.0839744808979841,0.0298172928302494,0.656191949541491,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.863852470667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.86385 (started at 783.11641)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.666111127492906,0.464519086417875,-0.0655319230812842,0.0379815355531992,0.576484176671073,0.40
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.608080756468
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.60808 (started at 815.15868)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.709513062158392,0.512499708099355,-0.0692805796170135,0.0311076914010664,0.614389043033527,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   828.951705065182
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=828.95171 (started at 841.57206)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.733264749902263,0.4735629957753 31,-0.173022759603442,-0.0104990560166985,0.625703542569827,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   746.033688503379
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=746.03369 (started at 764.8049)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.668484300948304,0.511386214511344,-0.0225537199171085,-0.0555161395310054,0.637385350117328,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   851.374280350157
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=851.37428 (started at 861.62867)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.718825604736078,0.482353834528678,-0.169307271979635,-0.00202808228451628,0.61955237324617,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   799.274821858098
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=799.27482 (started at 805.58759)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.708588218330156,0.475388236341846,-0.0854308202552785,-0.0141769860920425,0.629365591372229,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   840.483916141223
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=840.48392 (started at 851.00179)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.7207355111764,0.499551928552273,-0.14978054704757,-0.00930203523468703,0.574215742590509,0.4583
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   718.539233542033
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=718.53923 (started at 741.63598)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.677879886561889,0.431826550789902,-0.166188403762372,-0.0373795473864487,0.594622470548096,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   779.766644444383
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=779.76664 (started at 793.31737)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.609971703606512,0.539347830163897,-0.112605600194933,0.0157157744132437,0.616305785508771,0.424
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   850.752343563441
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=850.75234 (started at 870.41089)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.691623842946204,0.471544492587184,-0.01002945583283,0.025056547442537,0.633323728415006,0.4381
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   872.343067571387
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=872.34307 (started at 882.368)  (1 attempt(s):  1 valid,
0 errors)
#>  Start values from best fit:
#> 0.627986713114911,0.503358910622752,-0.108103614997471,0.0109464800897341,0.592093469438707,0.38
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   764.239047454333
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=764.23905 (started at 784.80812)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67105294959542,0.449887642591952,-0.143458786756119,0.0768224565147059,0.627515758592816,0.396
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   957.924375737499
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=957.92438 (started at 976.21158)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.739922367162102,0.48592706713264,-0.0717538245459881,-0.034202697660309,0.624077503132598,0.40
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   633.011904428516
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=633.0119 (started at 649.09008)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.690213663823057,0.46636269930082,-0.0879598248789163,-0.0170226022112735,0.624374780340516,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   694.317115186692
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=694.31712 (started at 706.63832)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.674456627932046,0.53188417705681,-0.0838787762828761,0.0242219079571848,0.605791639568043,0.402
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   706.595319002982
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=706.59532 (started at 719.7453)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.696198214011712,0.470333597005126,-0.067734751668189,0.0443113891228755,0.641500260684122,0.381
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   750.698512473295
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=750.69851 (started at 759.7683)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671673609111645,0.553223089870081,-0.0309216931729336,0.0279455905537439,0.576180579623614,0.38
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   833.816258681048
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=833.81626 (started at 845.53725)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.640499502275901,0.521837377170588,-0.133809939141175,0.0087513945145241 8,0.607513714681973,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   863.215725480724
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=863.21573 (started at 880.21941)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.70233691503351,0.52676364141794,-0.103029350673975,-0.0646796152983735,0.566209875148732,0.4158
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   782.27698978736
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=782.27699 (started at 802.16016)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.751080033038349,0.515348048019857,-0.0856262567981077,-0.0423177000638963,0.565376873969739,0.4
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   885.4000818504
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=885.40008 (started at 891.24522)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.711902092021382,0.492753826033058,-0.0766983353095619,0.0284133293266239,0.592131583550737,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   870.776467535192
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=870.77647 (started at 879.61589)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.717343023727884,0.483863994996277,-0.037774213058378,-0.00846865630005986,0.592730738847854,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   825.091328764672
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=825.09133 (started at 836.69057)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.671378801101552,0.495755542356324,-0.106318444891222,0.0223503254606083,0.584236589649017,0.43
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   732.6579075079 61
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=732.65791 (started at 743.57505)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.764032687703439,0.471287014221847,-0.0822300063767158,-0.00101252774380534,0.62229897574047,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   726.376014908232
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=726.37601 (started at 742.41338)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.698020502933625,0.540256680629718,-0.130671062767118,0.021901574828572,0.536368802056704,0.3970
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   743.062534381883
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=743.06253 (started at 756.40648)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.731754806899753,0.460964906274982,-0.143471428894092,-0.0216994359253728,0.604938695643486,0.42
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   797.484023499046
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=797.48402 (started at 806.83396)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.676277609893595,0.501583766265347,-0.0618798951792299,-0.0193574397570838,0.614583011607736,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   770.97749467596
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=770.97749 (started at 784.17806)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.706895709607195,0.511010671262467,-0.0872678739613862,0.0314695930810643,0.601610179752207,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   749.349505885138
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=749.34951 (started at 762.66042)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.653912563390342,0.510586038131102,-0.100988567723116,-0.0413977100766392,0.545606865185711,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   889.86167650208
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=889.86168 (started at 899.62257)  (1 attempt(s):  1
valid, 0 errors)
```

```
#>  Start values from best fit:
#> 0.664289357214513,0.510244947029733,-0.101676632875796,-0.00118367609196996,0.569508435314849,0.
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   725.595924156994
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=725.59592 (started at 751.84398)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.611388387413602,0.524511305659563,-0.124184601280723,0.0219294512140722,0.542040628278474,0.39
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   812.090920433347
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=812.09092 (started at 825.67386)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.741751985990055,0.469320568926058,-0.08799220120145,-0.0380914980600275,0.654436815220724,0.37
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   815.197848341626
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=815.19785 (started at 829.66831)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.693227358332933,0.409815382546601,-0.0514574408005689,-0.0205940175054711,0.635597713904742,0.
#> Running DTVAR with 12 parameters
```

```
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   820.593168415362
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=820.59317 (started at 838.4595)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.643304808567l6,0.397856533791987,-0.0386467541729308,-0.00783303856946256,0.661822861740966,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   752.466226469853
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=752.46623 (started at 760.05983)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.664098292782441,0.530990710130654,-0.106972799788052,0.0260199662012602,0.584333638667574,0.378
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   766.2199554157l5
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=766.21996 (started at 777.65895)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.624786753491203,0.480326983366548,-0.141720275922804,0.041052227184432,0.634241947184696,0.4442
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
```

```
#>
#>  Lowest minimum so far:   768.77163879313
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=768.77164 (started at 784.45062)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.744386876914039,0.465935520562982,-0.0692190128049471,-0.0676241467206233,0.568648789348167,0.3
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   741.223147927187
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=741.22315 (started at 755.42182)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.662178896542466,0.438474917081386,-0.0111442189404204,0.012028878822 65,0.594398301245561,0.3289
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   780.836285441667
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=780.83629 (started at 791.00989)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.69034740431757,0.49031134831171,-0.146390033092329,-0.0195401623412294,0.627402508235676,0.4030
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   798.994200037079
```

```
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=798.9942 (started at 803.52761)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.67956403208763,0.47765774431945,-0.0379101593064794,0.0154875956487848,0.616824904549432,0.3708
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   787.032257794067
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=787.03226 (started at 800.57952)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71609313261114,0.554203807091305,-0.123075940611452,-0.0417698485929651,0.571815552896042,0.423
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   751.084607795309
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=751.08461 (started at 761.5739)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.66130950018045,0.532629821554621,-0.101641402677008,0.00192166165092056,0.614479804396606,0.398
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   807.680486764455
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=807.68049 (started at 816.98743)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.71153682967932,0.486719003709776,-0.182176075602796,-0.0261125286606419,0.5992944461216,0.40825
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   767.418593752494
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=767.41859 (started at 787.98087)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.771433727134554,0.515790729464576,-0.089138196614291,-0.0397577183528818,0.579395652411828,0.30
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   838.480905826358
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=838.48091 (started at 847.96006)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.746043269189541,0.531610400000595,-0.101115741712202,-0.0485678796475715,0.598258794430362,0.39

#> Test passed

#> test-external-fitDTVARMx-fit-dt-var-mx-theta-null
#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   8072.92388058287
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=8072.9239 (started at 28769.589)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.694275926032199,0.483981161681256,-0.109921409205969,0.0106893320171428,0.623128242090866,0.411

#> Test passed

#> Running DTVAR with 12 parameters
#>
#> Beginning initial fit attempt
#> Running DTVAR with 12 parameters
#>
#>  Lowest minimum so far:   8072.92388058283
#>
#> Solution found
```

```
#>
#>  Solution found!   Final fit=8072.9239 (started at 8083.6837)  (1 attempt(s):  1
valid, 0 errors)
#>  Start values from best fit:
#> 0.694275886602082,0.483981180543278,-0.109921405855694,0.0106893607115448,0.623128244320184,0.411

#> Test passed
#> [[1]]
#> [[1]][[1]]
#> [[1]][[1]]$value
#> [[1]][[1]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[1]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[2]]
#> [[1]][[2]]$value
#> [[1]][[2]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[2]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[3]]
#> [[1]][[3]]$value
```

```
#> [[1]][[3]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[3]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[4]]
#> [[1]][[4]]$value
#> [[1]][[4]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[4]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[5]]
#> [[1]][[5]]$value
#> [[1]][[5]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[5]]$visible
#> [1] TRUE
#>
#>
#> [[1]][[6]]
#> [[1]][[6]]$value
#> [[1]][[6]]$value[[1]]
#> [1] TRUE
#>
#>
#> [[1]][[6]]$visible
#> [1] TRUE
```

Environment

```
ls()

#> [1] "root"
```

Class

```
#> [[1]]
#> [1] "root_criterion"
```

References

R Core Team. (2024). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. Vienna, Austria. https://www.R-project.org/