

Stock Analysis

Saurav

8/4/2021

Create the data files

```
##           date   Open   High    Low Close Adj.Close  Volume
## 1  2012-07-02 96.56  97.30 95.59 97.13 84.35642 3515900
## 2  2012-07-03 97.13  98.77 96.63 98.60 85.63309 2251100
## 3  2012-07-05 98.21  98.21 95.89 95.92 83.30554 3736900
## 2285 2021-07-30 376.57 379.95 373.06 374.88 374.88000 1474900
```

```
##           JPM.Open JPM.High JPM.Low JPM.Close JPM.Adjusted JPM.Volume
## 2012-07-02     36.27    36.36   35.59     36.28    28.08434 34274900
## 2012-07-03     35.96    36.14   35.54     35.88    28.00628 26705900
## 2012-07-05     35.61    35.66   34.22     34.38    26.83545 58519800
## 2021-07-30    152.58   153.67  151.20    151.78   151.78000 9804600
```

```
##           AES.Open AES.High AES.Low AES.Close AES.Adjusted AES.Volume
## 2012-07-02     12.94    12.94   12.64     12.72    9.696997 3358200
## 2012-07-03     12.72    12.82   12.68     12.81    9.765604 3649200
## 2012-07-05     12.75    12.88   12.71     12.83    9.780853 4550700
## 2021-07-30    23.89    24.22   23.65     23.70   23.700001 5208900
```

```
##           DTE.Open DTE.High DTE.Low DTE.Close DTE.Adjusted DTE.Volume
## 2012-07-02   50.02553  51.03830 50.02553  50.53617   36.88431 1574618
## 2012-07-03   50.51915  50.70638 50.43404  50.68085   36.98992  438980
## 2012-07-05   50.50213  50.85106 50.37447  50.37447   36.76629  841653
## 2021-07-30 117.91000 118.66000 116.95000 117.32000   117.32000  643000
```

```
##           AAPL.Open AAPL.High AAPL.Low AAPL.Close AAPL.Adjusted AAPL.Volume
## 2012-07-02   20.88321  21.19536 20.84286  21.16143   18.19678 400092000
## 2012-07-03   21.24571  21.42857 21.21429  21.40750   18.40837 241712800
## 2012-07-05   21.44857  21.94071 21.41607  21.78357   18.73176 484383200
## 2021-07-30 144.38001 146.33000 144.11000 145.86000   145.86000  70382000
```

```
##           AMZN.Open AMZN.High AMZN.Low AMZN.Close AMZN.Adjusted AMZN.Volume
## 2012-07-02   229.30    229.34  226.34    229.32    229.32  2330700
## 2012-07-03   229.14    229.53  227.59    229.53    229.53  1331700
## 2012-07-05   228.62    230.50  226.53    227.06    227.06  2682300
## 2021-07-30 3347.95   3368.14 3306.98   3327.59   3327.59  9957100
```

Plotting the data for each security to check for missing data

```

##      Index          JPM.Open        JPM.High        JPM.Low
## Min.   :2012-07-02  Min.   : 33.24  Min.   : 34.12  Min.   : 33.10
## 1st Qu.:2014-10-09  1st Qu.: 58.54  1st Qu.: 59.09  1st Qu.: 58.06
## Median :2017-01-17  Median : 84.93  Median : 85.73  Median : 83.82
## Mean    :2017-01-15  Mean    : 84.75  Mean    : 85.53  Mean    : 83.99
## 3rd Qu.:2019-04-25  3rd Qu.:108.66 3rd Qu.:109.83 3rd Qu.:107.49
## Max.    :2021-07-30  Max.    :167.26  Max.    :167.44  Max.    :165.53
##      JPM.Close       JPM.Adjusted     JPM.Volume
## Min.   : 33.90  Min.   : 26.46  Min.   : 3324300
## 1st Qu.: 58.57  1st Qu.: 48.79  1st Qu.:11725700
## Median : 84.70  Median : 74.98  Median :14658500
## Mean   : 84.77  Mean   : 76.51  Mean   :16666193
## 3rd Qu.:108.50  3rd Qu.:100.03 3rd Qu.:19471700
## Max.   :166.44  Max.   :165.49  Max.   :83001000

```

data.JPM\$JPM.Close

2012-07-02 / 2021-07-30



```

##      Index          GS.Open        GS.High        GS.Low
## Min.   :2012-07-02  Min.   : 91.94  Min.   : 93.42  Min.   : 91.15
## 1st Qu.:2014-10-09  1st Qu.:164.93  1st Qu.:166.40  1st Qu.:163.34
## Median :2017-01-17  Median :195.48  Median :197.59  Median :193.97
## Mean    :2017-01-15  Mean    :200.71  Mean    :202.71  Mean    :198.75
## 3rd Qu.:2019-04-25  3rd Qu.:227.20  3rd Qu.:229.00  3rd Qu.:225.24
## Max.    :2021-07-30  Max.    :393.00  Max.    :393.26  Max.    :387.55
##      GS.Close       GS.Adjusted     GS.Volume
## Min.   : 93.16  Min.   : 80.91  Min.   : 467700
## 1st Qu.:165.04  1st Qu.:148.42  1st Qu.: 2294600
## Median :195.68  Median :183.07  Median : 2931500
## Mean   :200.76  Mean   :187.63  Mean   : 3263362
## 3rd Qu.:226.97  3rd Qu.:213.89  3rd Qu.: 3760300
## Max.   :391.45  Max.   :391.45  Max.   :20410100

```

data.GS\$GS.Close

2012-07-02 / 2021-07-30



```

##      Index          AES.Open        AES.High        AES.Low
## Min.   :2012-07-02  Min.   : 8.60  Min.   : 8.65  Min.   : 8.11
## 1st Qu.:2014-10-09  1st Qu.:11.42  1st Qu.:11.58  1st Qu.:11.31
## Median :2017-01-17  Median :13.10  Median :13.26  Median :12.96
## Mean    :2017-01-15  Mean    :14.26  Mean    :14.43  Mean    :14.09
## 3rd Qu.:2019-04-25  3rd Qu.:15.24  3rd Qu.:15.41  3rd Qu.:15.10
## Max.    :2021-07-30  Max.    :28.80  Max.    :29.07  Max.    :28.53
## 
##      AES.Close       AES.Adjusted     AES.Volume
## Min.   : 8.54  Min.   : 6.936  Min.   : 986200
## 1st Qu.:11.43  1st Qu.: 9.644  1st Qu.: 3995400
## Median :13.11  Median :10.660  Median : 5228200
## Mean   :14.26  Mean   :12.475  Mean   : 5747263
## 3rd Qu.:15.28  3rd Qu.:14.137  3rd Qu.: 6803000
## Max.   :28.91  Max.   :28.575  Max.   :46067600

```

data.AES\$AES.Close

2012-07-02 / 2021-07-30



```

##      Index          DTE.Open        DTE.High        DTE.Low
## Min.   :2012-07-02   Min.   : 49.64   Min.   : 49.86   Min.   : 49.41
## 1st Qu.:2014-10-09  1st Qu.: 65.49   1st Qu.: 66.01   1st Qu.: 64.97
## Median :2017-01-17  Median : 83.29   Median : 83.84   Median : 82.63
## Mean    :2017-01-15  Mean    : 82.11   Mean    : 82.75   Mean    : 81.44
## 3rd Qu.:2019-04-25  3rd Qu.: 97.21   3rd Qu.: 98.34   3rd Qu.: 96.41
## Max.    :2021-07-30  Max.    :122.85   Max.    :123.77   Max.    :121.20
## 
##      DTE.Close       DTE.Adjusted     DTE.Volume
## Min.   : 49.70   Min.   : 36.28   Min.   : 213850
## 1st Qu.: 65.51   1st Qu.: 52.17   1st Qu.: 878665
## Median : 83.37   Median : 71.87   Median :1120128
## Mean   : 82.13   Mean   : 72.06   Mean   :1249168
## 3rd Qu.: 97.33   3rd Qu.: 90.23   3rd Qu.:1467458
## Max.   :122.68   Max.   :121.69   Max.   :6169690

```

data.DTE\$DTE.Close

2012-07-02 / 2021-07-30



```

##      Index          AAPL.Open        AAPL.High        AAPL.Low
## Min.   :2012-07-02   Min.   : 13.86   Min.   : 14.27   Min.   : 13.75
## 1st Qu.:2014-10-09  1st Qu.: 24.20   1st Qu.: 24.42   1st Qu.: 23.95
## Median :2017-01-17  Median : 32.57   Median : 32.85   Median : 32.34
## Mean    :2017-01-15  Mean    : 45.73   Mean    : 46.21   Mean    : 45.25
## 3rd Qu.:2019-04-25  3rd Qu.: 51.47   3rd Qu.: 51.94   3rd Qu.: 50.97
## Max.    :2021-07-30  Max.    :149.24   Max.    :150.00   Max.    :147.70
## 
##      AAPL.Close       AAPL.Adjusted     AAPL.Volume
## Min.   : 13.95   Min.   : 12.17   Min.   :4.545e+07
## 1st Qu.: 24.19   1st Qu.: 22.23   1st Qu.:1.043e+08
## Median : 32.57   Median : 29.82   Median :1.500e+08
## Mean   : 45.75   Mean   : 44.10   Mean   :2.031e+08
## 3rd Qu.: 51.62   3rd Qu.: 50.34   3rd Qu.:2.481e+08
## Max.   :149.15   Max.   :149.15   Max.   :1.461e+09

```

dataAAPL\$AAPL.Close

2012-07-02 / 2021-07-30



```

##      Index          AMZN.Open        AMZN.High        AMZN.Low
## Min.   :2012-07-02   Min.   : 215.6   Min.   : 217.3   Min.   : 212.6
## 1st Qu.:2014-10-09  1st Qu.: 359.1   1st Qu.: 362.9   1st Qu.: 356.1
## Median :2017-01-17  Median : 829.0   Median : 833.5   Median : 822.2
## Mean    :2017-01-15  Mean    :1203.4   Mean    :1215.8   Mean    :1189.4
## 3rd Qu.:2019-04-25  3rd Qu.:1796.0   3rd Qu.:1809.0   3rd Qu.:1777.4
## Max.    :2021-07-30  Max.    :3744.0   Max.    :3773.1   Max.    :3696.8
##      AMZN.Close       AMZN.Adjusted     AMZN.Volume
## Min.   : 215.4   Min.   : 215.4   Min.   : 881300
## 1st Qu.: 359.8   1st Qu.: 359.8   1st Qu.: 2676600
## Median : 829.0   Median : 829.0   Median : 3463000
## Mean   :1203.0   Mean   :1203.0   Mean   : 4039804
## 3rd Qu.:1794.2   3rd Qu.:1794.2   3rd Qu.: 4705200
## Max.   :3731.4   Max.   :3731.4   Max.   :23856100

```

data.AMZ\$AMZN.Close

2012-07-02 / 2021-07-30



Plot candlestick charts for each stocks using weekly data

```

##                wk.JPM.Open wk.JPM.High wk.JPM.Low wk.JPM.Close wk.JPM.Volume
## 2012-07-06      36.27      36.36     33.73      33.90    151557800
## 2012-07-13      33.81      36.20     33.54      36.07    221167300
## 2012-07-20      35.76      35.85     33.90      33.90    195997400
## 2021-07-30     150.19     153.87    149.80     151.78    47512100
##                wk.JPM.Adjusted
## 2012-07-06    32057200
## 2012-07-13    83001000
## 2012-07-20   36301200
## 2021-07-30   9804600

```

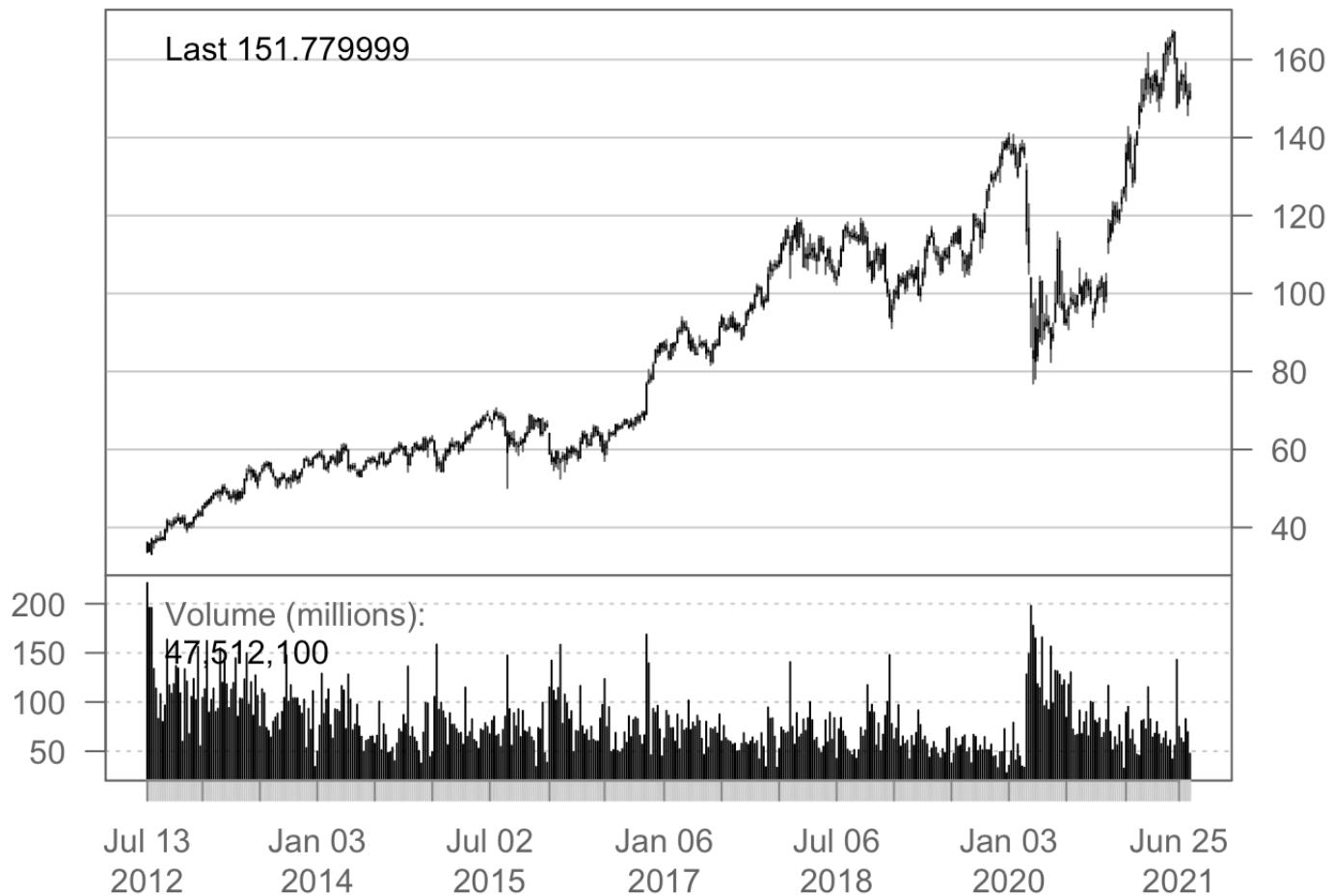
```

##                OHLC.Open OHLC.High OHLC.Low OHLC.Close OHLC.Volume
## 2012-07-13      33.81      36.20     33.54      36.07    221167300
## 2012-07-20      35.76      35.85     33.90      33.90    195997400
## 2012-07-27      33.24      37.20     33.10      36.89    195833100
## 2021-07-30     150.19     153.87    149.80     151.78    47512100

```

JPM OHLC

[2012-07-13/2021-07-30]



```

##                  wk.GS.Open wk.GS.High wk.GS.Low wk.GS.Close wk.GS.Volume
## 2012-07-06      96.56     98.77    94.50     95.47    12816700
## 2012-07-13      94.84     97.86    93.15     97.43    20085700
## 2012-07-20      97.73    100.49    94.10     94.16    30156400
## 2021-07-30     373.18    379.95   369.22     374.88    7791300
##                  wk.GS.Adjusted
## 2012-07-06      3312800
## 2012-07-13      4592400
## 2012-07-20      5543900
## 2021-07-30     1474900

```

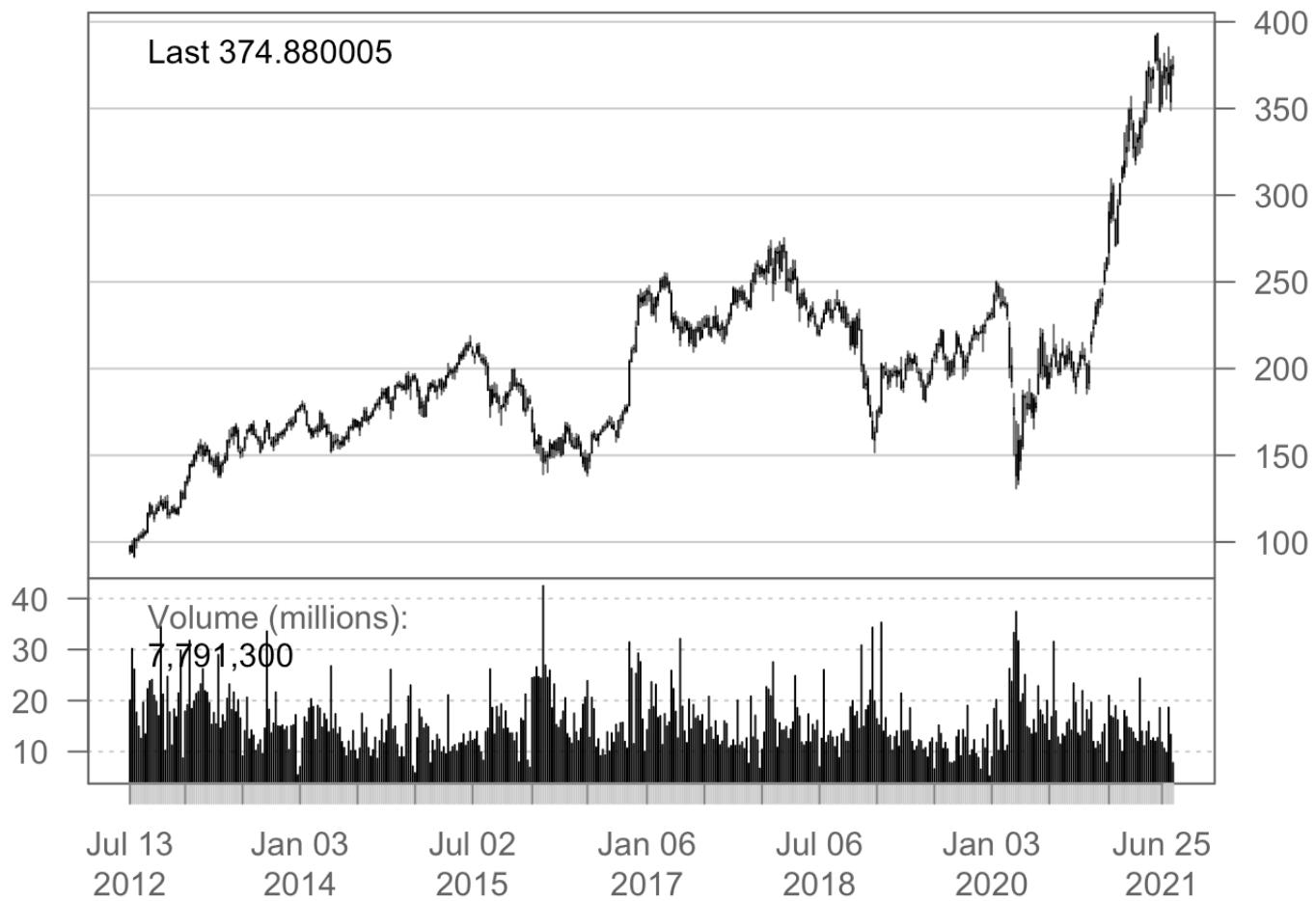
```

##                  OHLC.Open OHLC.High OHLC.Low OHLC.Close OHLC.Volume
## 2012-07-13      94.84     97.86    93.15     97.43    20085700
## 2012-07-20      97.73    100.49    94.10     94.16    30156400
## 2012-07-27      91.94    102.05    91.15    101.64    26116400
## 2021-07-30     373.18    379.95   369.22     374.88    7791300

```

GS OHLC

[2012-07-13/2021-07-30]



```

##          wk.AES.Open wk.AES.High wk.AES.Low wk.AES.Close wk.AES.Volume
## 2012-07-06      12.94      12.94     12.64      12.84      16029300
## 2012-07-13      12.84      12.85     12.54      12.72      19780400
## 2012-07-20      12.69      12.90     12.56      12.77      25941900
## 2021-07-30      23.91      24.49     23.65      23.70      21913900
##          wk.AES.Adjusted
## 2012-07-06      4471200
## 2012-07-13      2963500
## 2012-07-20      4019700
## 2021-07-30      5208900

```

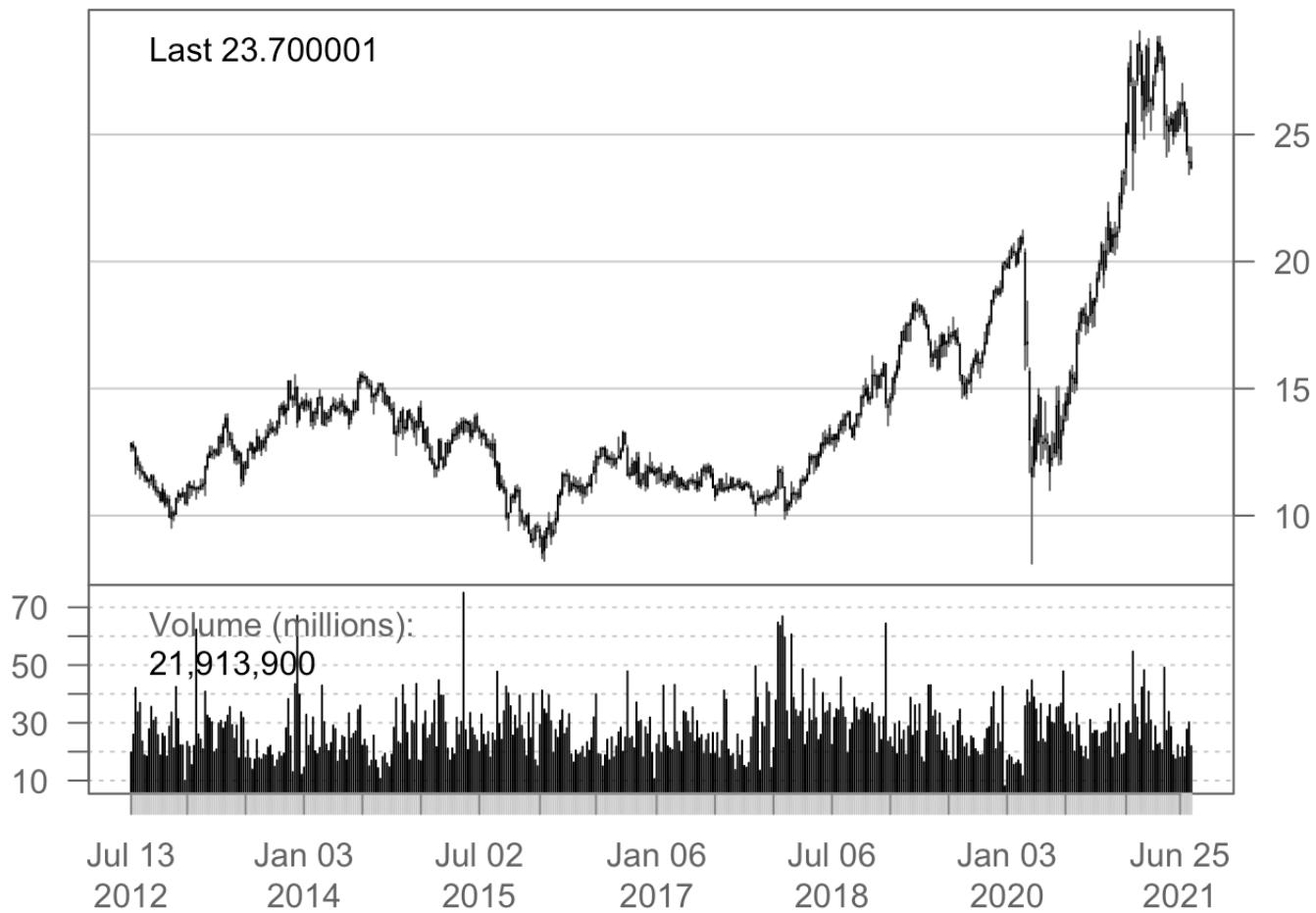
```

##          OHLC.Open OHLC.High OHLC.Low OHLC.Close OHLC.Volume
## 2012-07-13      12.84      12.85     12.54      12.72      19780400
## 2012-07-20      12.69      12.90     12.56      12.77      25941900
## 2012-07-27      12.64      12.71     11.65      11.98      42110700
## 2021-07-30      23.91      24.49     23.65      23.70      21913900

```

AES OHLC

[2012-07-13/2021-07-30]



```

##                               wk.DTE.Open wk.DTE.High wk.DTE.Low wk.DTE.Close wk.DTE.Volume
## 2012-07-06      50.02553    51.03830  50.02553   50.41702     3492101
## 2012-07-13      50.36595    51.22553  49.87234   51.05532     3609249
## 2012-07-20      51.05532    52.12766  50.92766   51.94043     4167726
## 2021-07-30     116.10000   119.27000 114.75000   117.32000    5555000
##                               wk.DTE.Adjusted
## 2012-07-06          636850
## 2012-07-13          845648
## 2012-07-20          826613
## 2021-07-30          643000

```

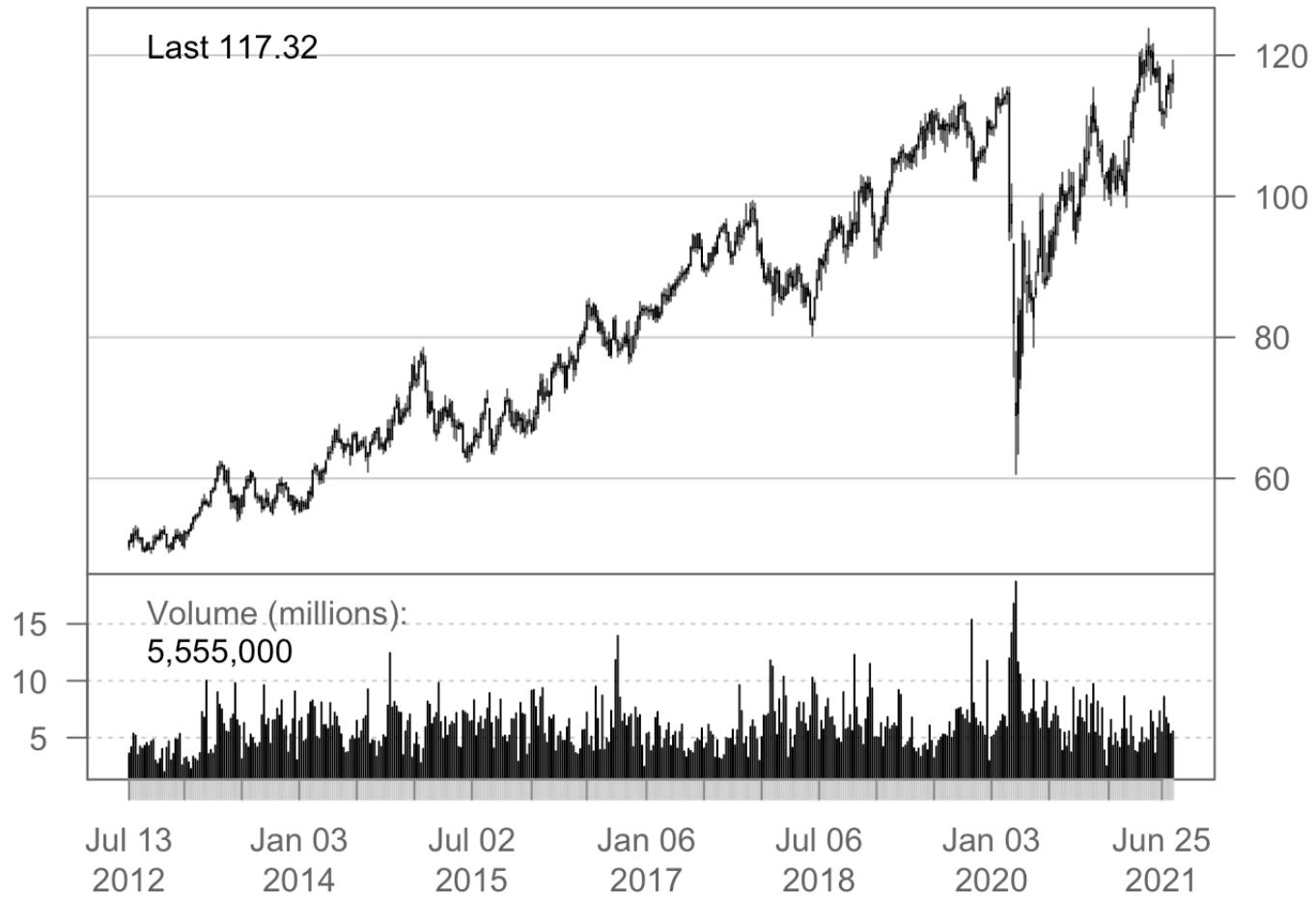
```

##                               OHLC.Open OHLC.High OHLC.Low OHLC.Close OHLC.Volume
## 2012-07-13      50.36595   51.22553  49.87234   51.05532     3609249
## 2012-07-20      51.05532   52.12766  50.92766   51.94043     4167726
## 2012-07-27      51.10638   52.83404  50.27234   52.04255     5356004
## 2021-07-30     116.10000  119.27000 114.75000   117.32000    5555000

```

DTE OHLC

[2012-07-13/2021-07-30]



```

##          wk.AMZN.Open wk.AMZN.High wk.AMZN.Low wk.AMZN.Close wk.AMZN.Volume
## 2012-07-06      229.30     230.50    224.18     225.05      9547900
## 2012-07-13      225.00     227.14    212.61     218.39     12476900
## 2012-07-20      216.60     229.39    213.96     228.29     15703600
## 2021-07-30     3673.17    3712.08   3306.98     3327.59    25508500
##          wk.AMZN.Adjusted
## 2012-07-06      3203200
## 2012-07-13      2221900
## 2012-07-20      4170000
## 2021-07-30      9957100

```

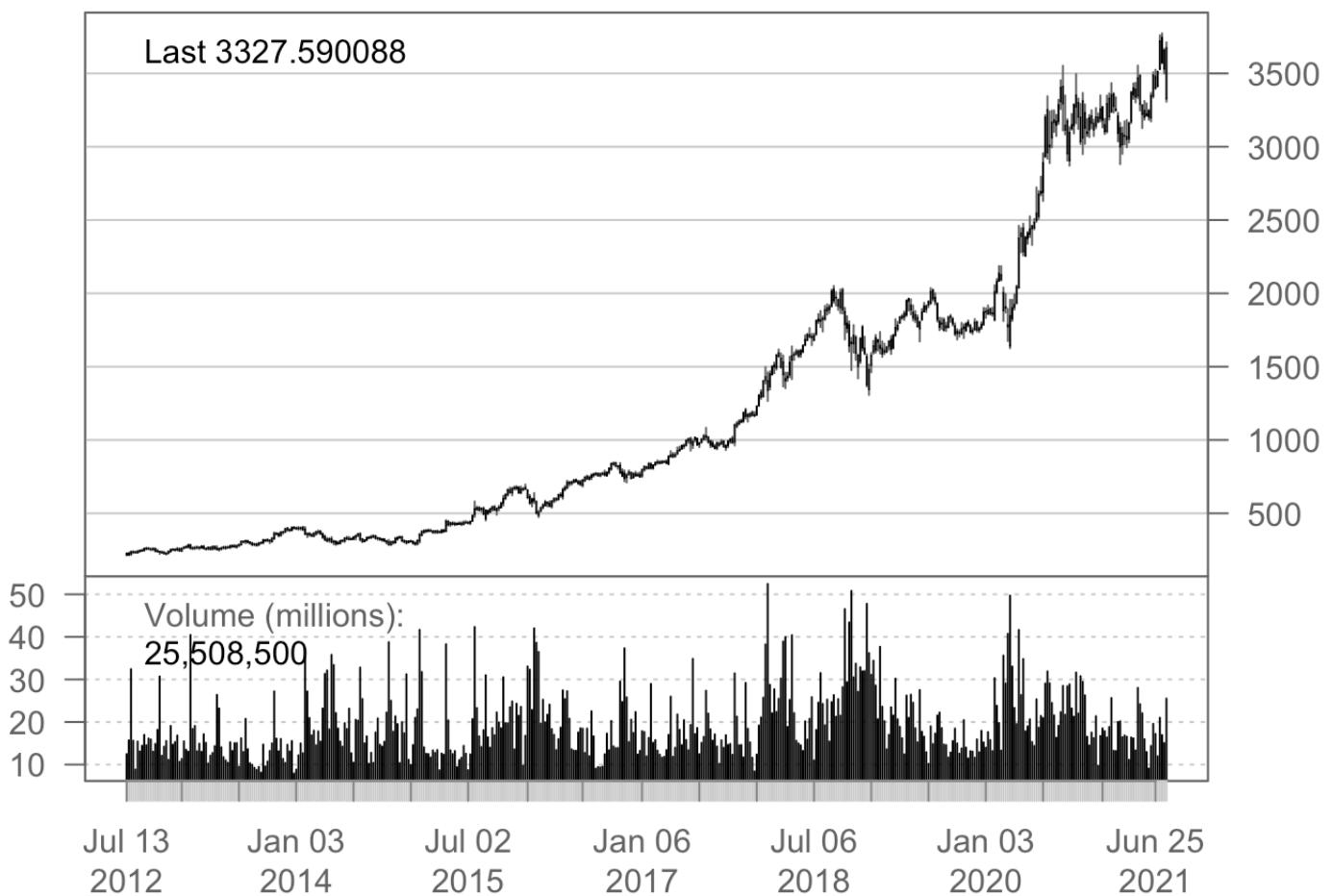
```

##          OHLC.Open OHLC.High OHLC.Low OHLC.Close OHLC.Volume
## 2012-07-13      225.00     227.14    212.61     218.39     12476900
## 2012-07-20      216.60     229.39    213.96     228.29     15703600
## 2012-07-27      224.72     238.34    214.95     237.32     32421800
## 2021-07-30     3673.17    3712.08   3306.98     3327.59    25508500

```

AMZN OHLC

[2012-07-13/2021-07-30]



```

##          wk.AAPL.Open wk.AAPL.High wk.AAPL.Low wk.AAPL.Close wk.AAPL.Volume
## 2012-07-06      20.88321    21.94071   20.84286    21.63857     1545118400
## 2012-07-13      21.61786    22.13821   21.16714    21.60607     2100154000
## 2012-07-20      21.61143    21.97679   21.54107    21.58214     1681918000
## 2021-07-30     148.27000   149.83000  142.53999   145.86000     423265400
##          wk.AAPL.Adjusted
## 2012-07-06      418930400
## 2012-07-13      311427200
## 2012-07-20      397471200
## 2021-07-30      70382000

```

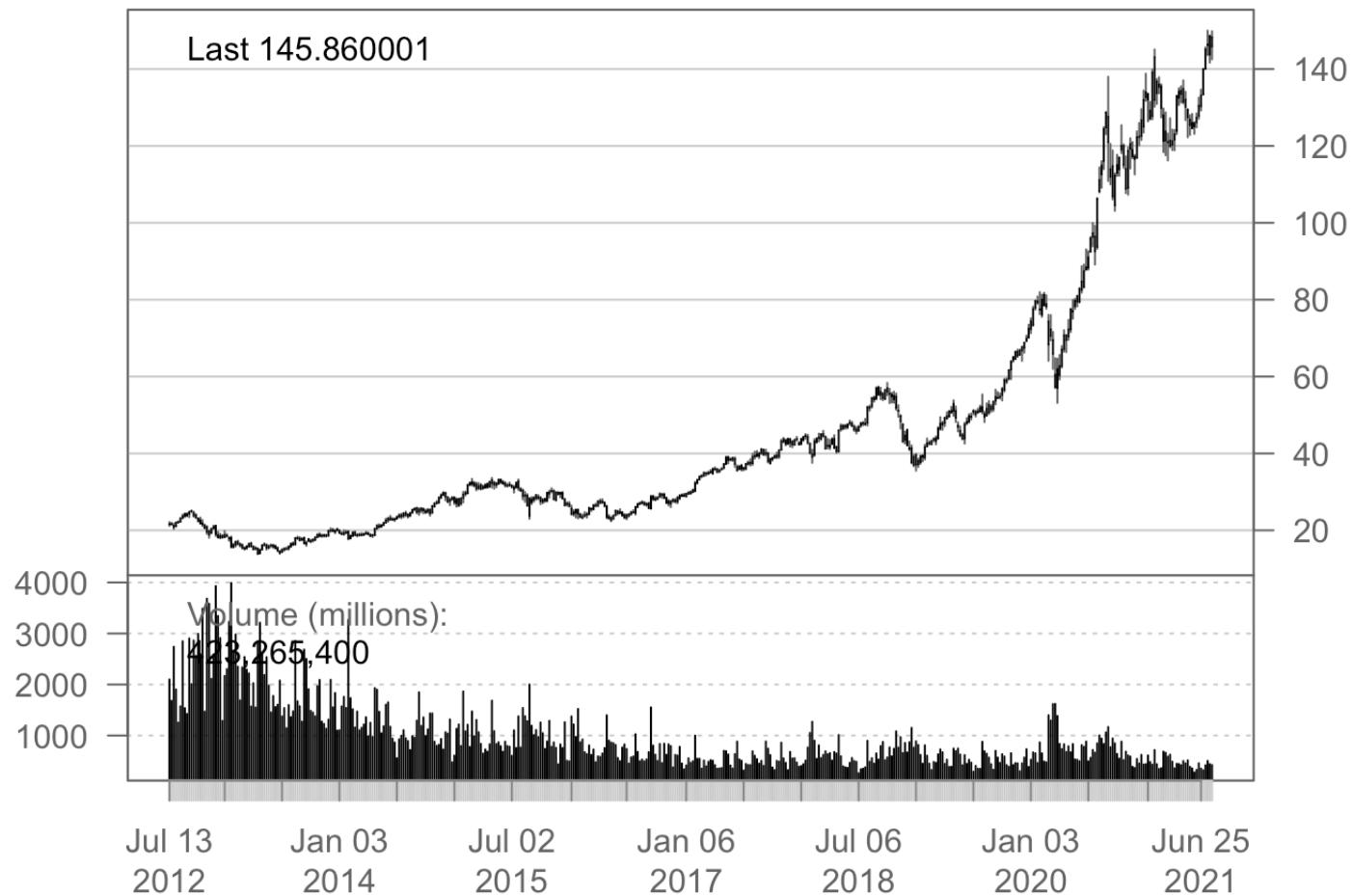
```

##          OHLC.Open OHLC.High OHLC.Low OHLC.Close OHLC.Volume
## 2012-07-13    21.61786   22.13821  21.16714   21.60607     2100154000
## 2012-07-20    21.61143   21.97679  21.54107   21.58214     1681918000
## 2012-07-27    21.22857   21.77429  20.35714   20.89857     2740990000
## 2021-07-30   148.27000  149.83000  142.53999  145.86000     423265400

```

AAPL OHLC

[2012-07-13/2021-07-30]



Checking the gains during the pandemic from July 2019 to July 2021 for each sector

```
## JPM.Close GS.Close AES.Close DTE.Close AAPL.Close AMZN.Close
## 2019-07-01 113.68 206.86 16.77 109.1745 50.3875 1922.19
## 2019-07-02 113.80 205.98 16.95 110.5021 50.6825 1934.31
## 2019-07-03 112.82 206.04 17.28 111.5660 51.1025 1939.00
## 2021-07-30 151.78 374.88 23.70 117.3200 145.8600 3327.59
```

```
## [1] 7
```

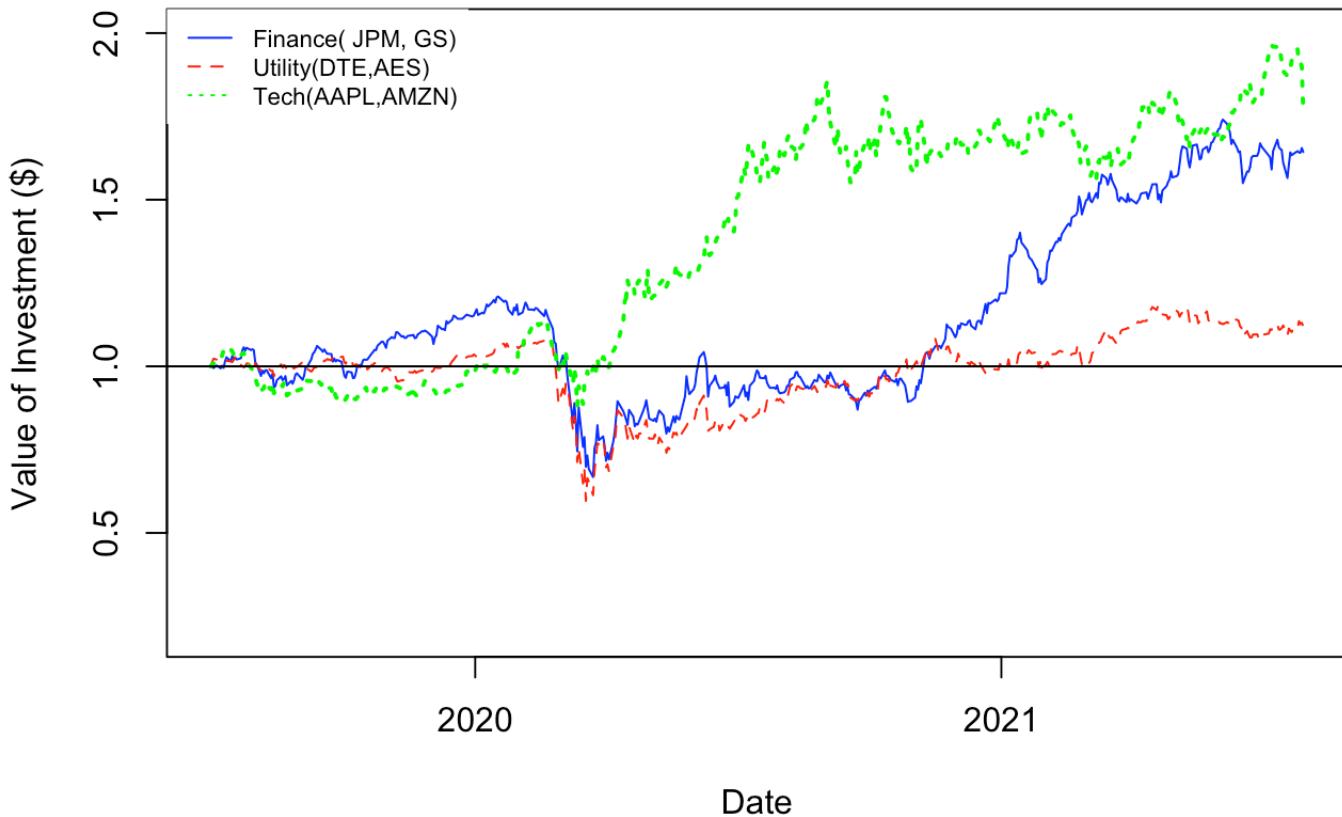
```
## date JPM GS AES DTE AAPL AMZN
## 1 2019-07-01 113.68 206.86 16.77 109.1745 50.3875 1922.19
## 2 2019-07-02 113.80 205.98 16.95 110.5021 50.6825 1934.31
## 3 2019-07-03 112.82 206.04 17.28 111.5660 51.1025 1939.00
## 526 2021-07-30 151.78 374.88 23.70 117.3200 145.8600 3327.59
```

```
## [1] 1.0000000 0.9976290 0.9947588 1.0026517 0.9940101 1.0018094
```

```
## [1] 1.000000 1.011971 1.023038 1.020281 1.021600 1.022170
```

```
## [1] 1.000000 1.006294 1.008884 1.010844 1.015081 1.033475
```

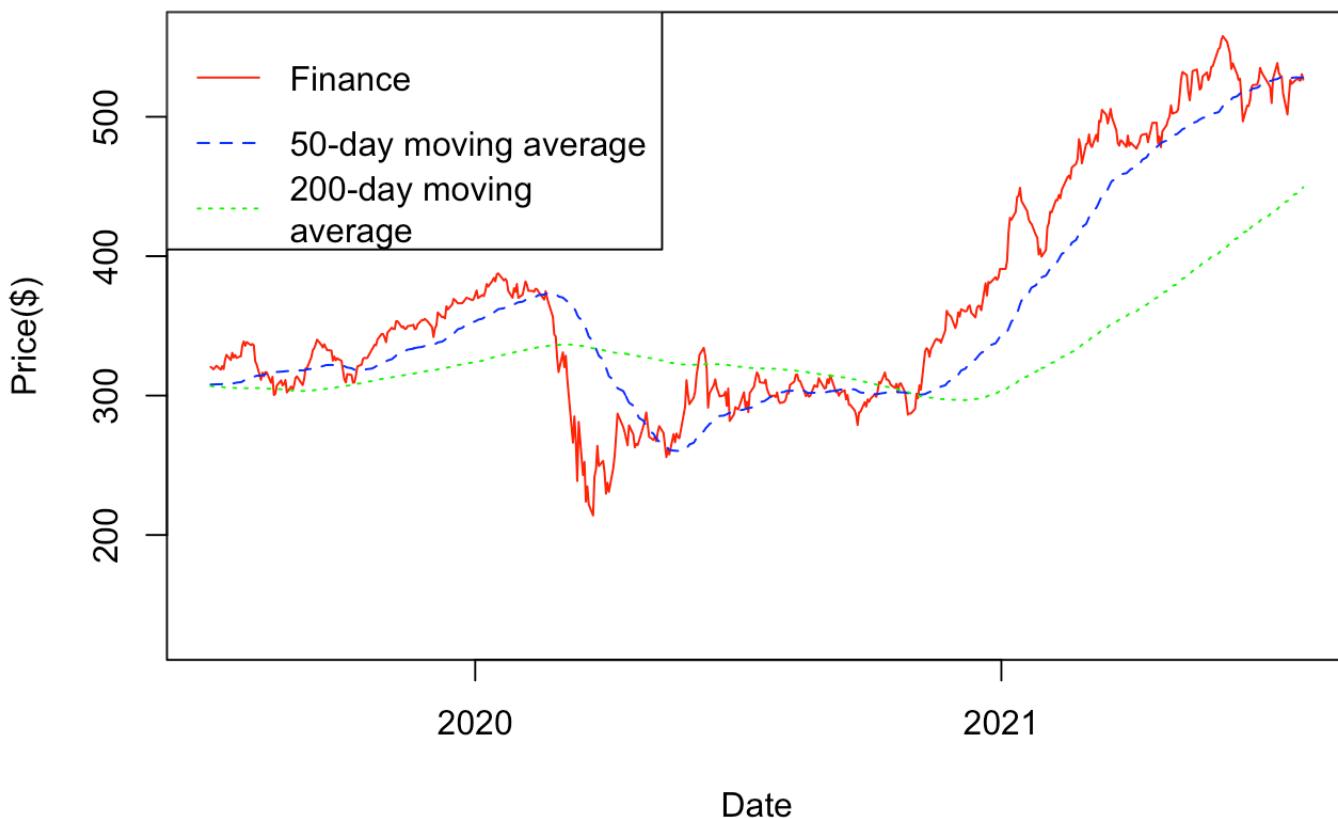
Value of \$1 Investment in Financial, Utility and Tech sector between July 1st 2019 - July 31st 2021



Creating moving average for each sector

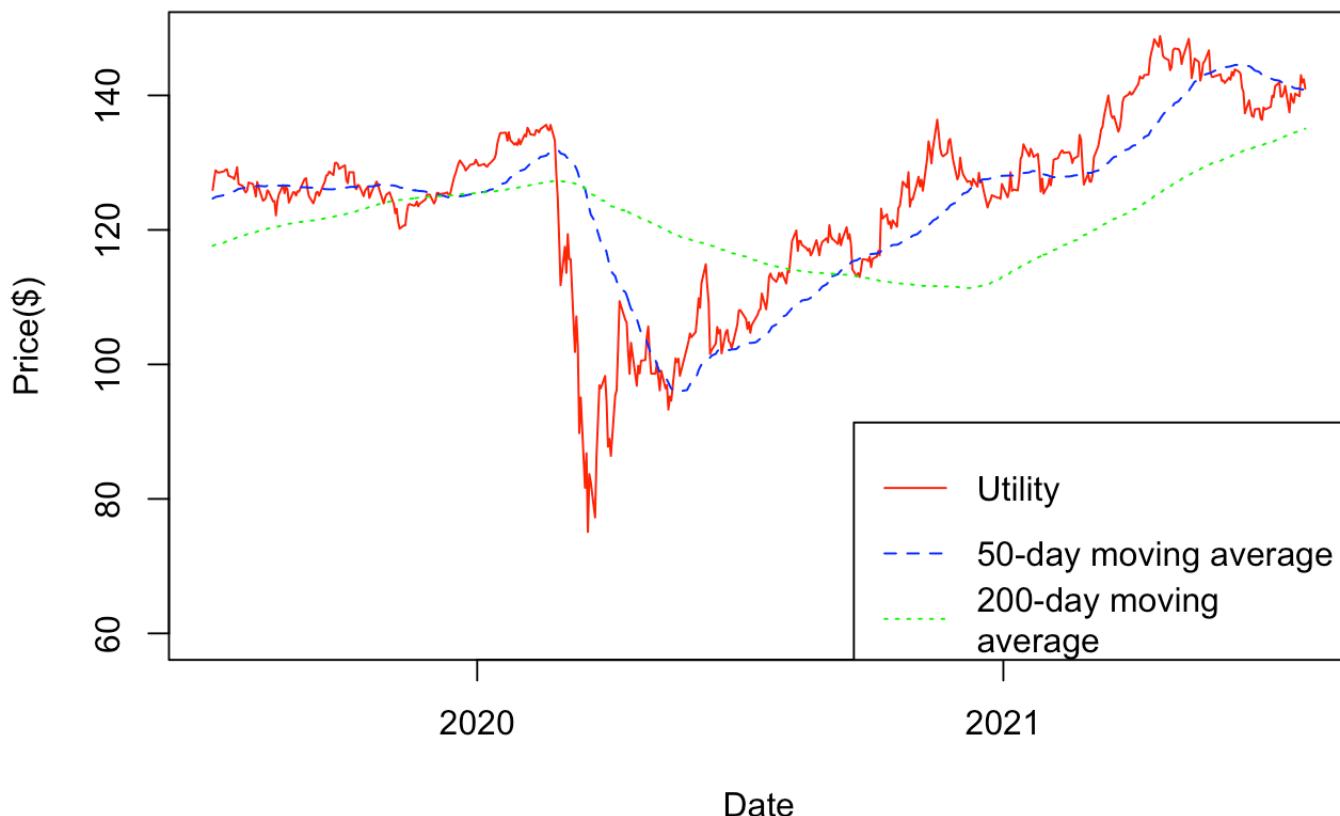
```
##           JPM.Close  sma50  sma200
## 2019-07-01    320.54 307.91 306.81
## 2019-07-02    319.78 307.94 306.70
## 2019-07-03    318.86 307.96 306.58
## 2021-07-30    526.66 528.20 449.39
```

Simple Moving Average for Finance sector July 2019 to July 2021



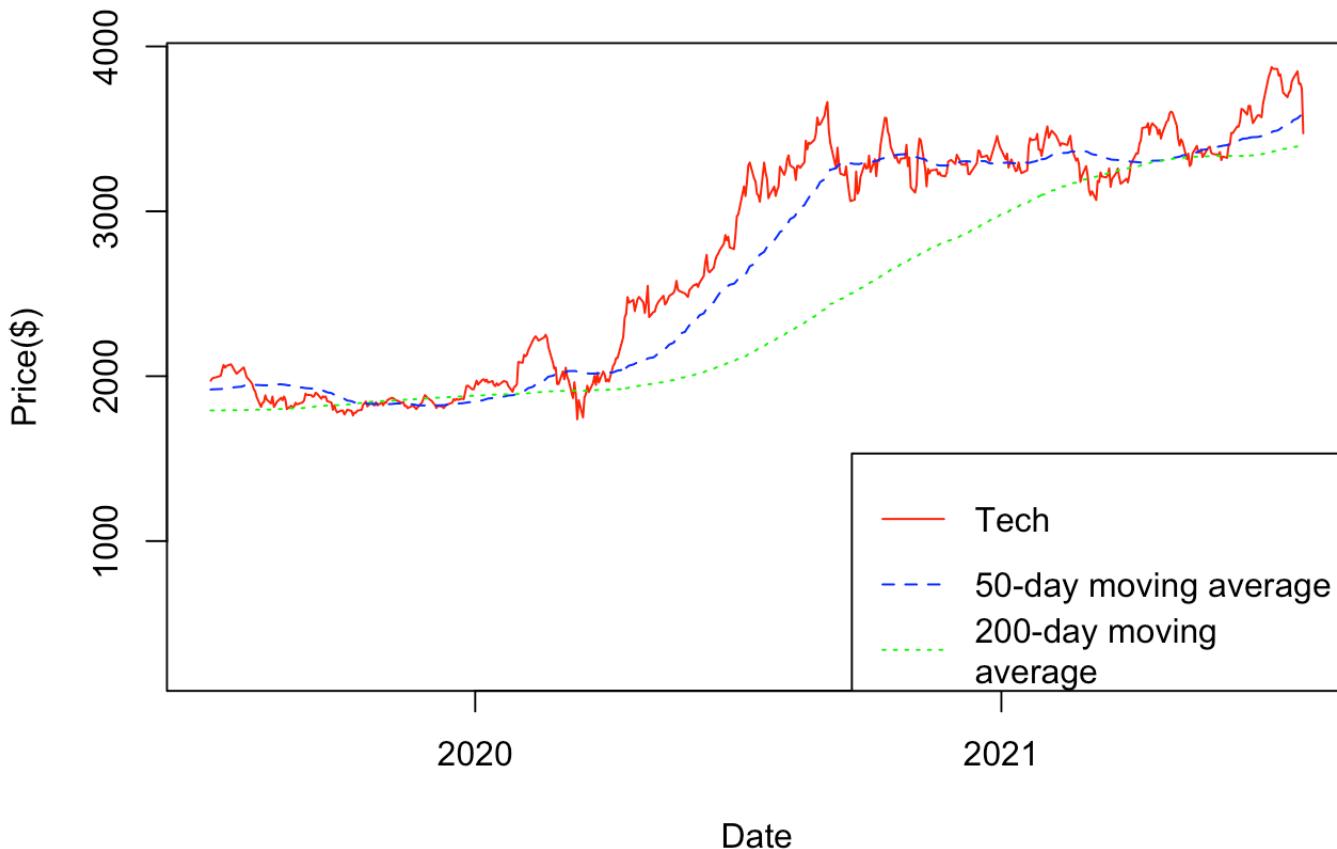
```
##           AES.Close   sma50  sma200
## 2019-07-01    125.94 124.67 117.63
## 2019-07-02    127.45 124.77 117.71
## 2019-07-03    128.85 124.90 117.81
## 2021-07-30    141.02 140.84 135.05
```

Simple Moving Average for Utility sector July 2019 to July 2021



```
##           AMZN.Close  sma50  sma200
## 2019-07-01      1972.6 1919.1 1792.4
## 2019-07-02      1985.0 1920.1 1792.1
## 2019-07-03      1990.1 1920.4 1792.0
## 2021-07-30     3473.5 3589.8 3397.4
```

Simple Moving Average for Tech sector July 2019 to July 2021



Bollinger BandsPlot for Pandemic Period

```
##           JPM.Close GS.Close DTE.Close AES.Close AAPL.Close AMZN.Close   all
## 2019-07-01    113.68   206.86    109.17    16.77     50.388   1922.2 2419.1
## 2019-07-02    113.80   205.98    110.50    16.95     50.682   1934.3 2432.2
## 2019-07-03    112.82   206.04    111.57    17.28     51.103   1939.0 2437.8
## 2021-07-30    151.78   374.88    117.32    23.70    145.860   3327.6 4141.1
```

```
##           JPM.Close GS.Close DTE.Close AES.Close AAPL.Close AMZN.Close   all
## 2019-07-01    113.68   206.86    109.17    16.77     50.388   1922.2 2419.1
## 2019-07-02    113.80   205.98    110.50    16.95     50.682   1934.3 2432.2
## 2019-07-03    112.82   206.04    111.57    17.28     51.103   1939.0 2437.8
## 2021-07-30    151.78   374.88    117.32    23.70    145.860   3327.6 4141.1
##
##           avg      sd
## 2019-07-01    NA      NA
## 2019-07-02    NA      NA
## 2019-07-03    NA      NA
## 2021-07-30  4435.2  94.948
```

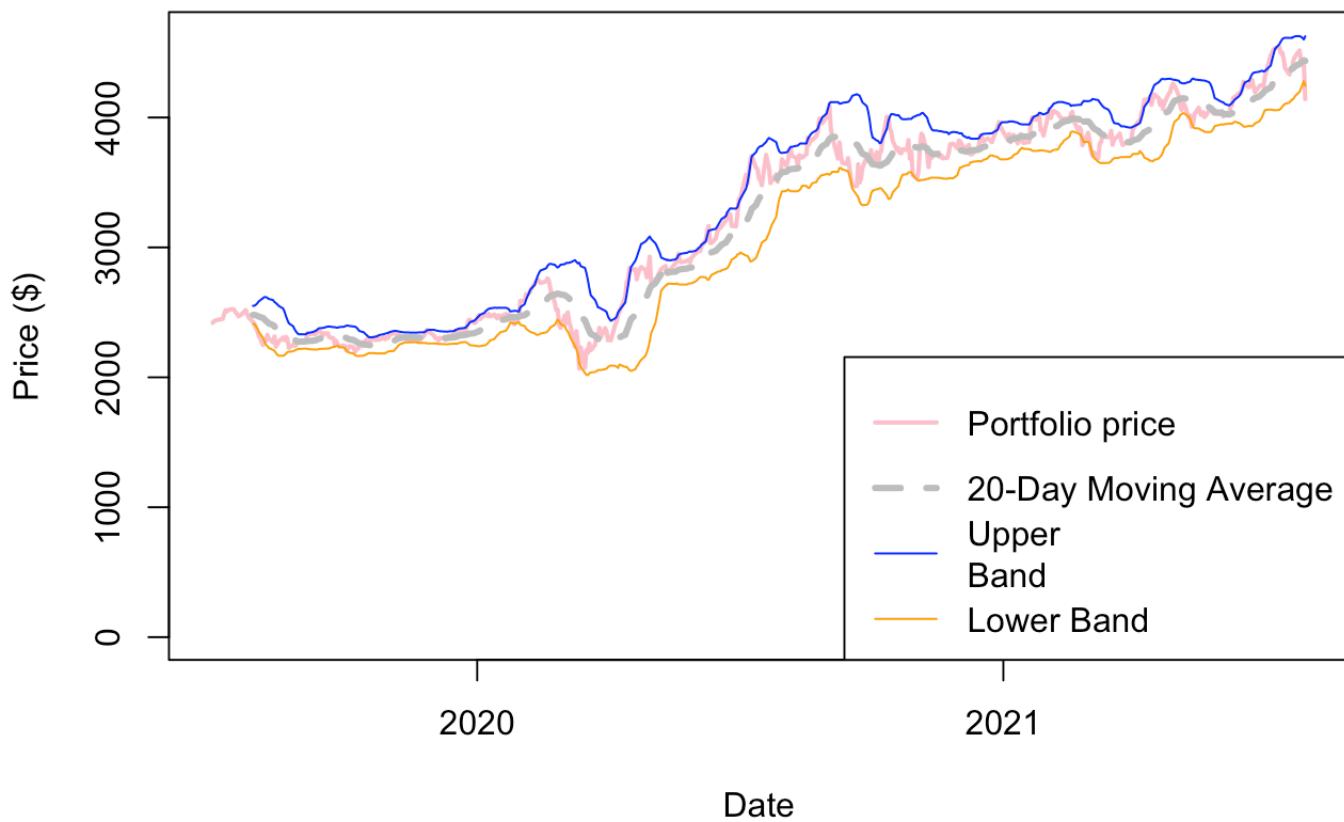
```

##          JPM.Close GS.Close DTE.Close AES.Close AAPL.Close AMZN.Close    all
## 2019-07-01     113.68   206.86    109.17    16.77     50.388   1922.2 2419.1
## 2019-07-02     113.80   205.98    110.50    16.95     50.682   1934.3 2432.2
## 2019-07-03     112.82   206.04    111.57    17.28     51.103   1939.0 2437.8
## 2021-07-30    151.78   374.88    117.32    23.70    145.860   3327.6 4141.1
##           avg      sd  sd2up sd2down
## 2019-07-01     NA      NA     NA      NA
## 2019-07-02     NA      NA     NA      NA
## 2019-07-03     NA      NA     NA      NA
## 2021-07-30  4435.2  94.948  4625.1  4245.3

```

Portfolio - Bollinger Bands (20 days, 2 deviations)

July 1st 2019 - July 31,2021



Portfolio return during the pandemic (Gross and Logarithmic)

```

##          JPM.Close GS.Close AES.Close DTE.Close AAPL.Close AMZN.Close
## 2019-07-01    113.68   206.86     16.77    109.17     50.388    1922.2
## 2019-07-02    113.80   205.98     16.95    110.50     50.682    1934.3
## 2019-07-03    112.82   206.04     17.28    111.57     51.103    1939.0
## 2019-07-05    113.49   207.90     17.12    111.38     51.057    1942.9
## 2021-07-30    151.78   374.88     23.70    117.32    145.860    3327.6
##          JPM.Price.Ret GS.Price.Ret DTE.Price.Ret AES.Price.Ret
## 2019-07-01           NA           NA           NA           NA
## 2019-07-02    0.0010556 -0.00425411    0.0121609  0.0107335
## 2019-07-03   -0.0086116  0.00029128    0.0096272  0.0194690
## 2019-07-05    0.0059386  0.00902738   -0.0016782 -0.0092593
## 2021-07-30   -0.0079739 -0.00707187   -0.0068568 -0.0234857
##          AAPL.Price.Ret AMZN.Price.Ret
## 2019-07-01           NA           NA
## 2019-07-02    0.00585459  0.0063054
## 2019-07-03    0.00828692  0.0024246
## 2019-07-05   -0.00088062  0.0020165
## 2021-07-30    0.00151059 -0.0756489

```

```
## [1] 0.71187
```

```

##          JPM.Close JPM.Adjusted GS.Close GS.Adjusted AES.Close AES.Adjusted
## 2019-07-01    113.68      106.05   206.86     198.16     16.77    15.667
## 2019-07-02    113.80      106.16   205.98     197.32     16.95    15.835
## 2019-07-03    112.82      105.99   206.04     197.37     17.28    16.143
## 2019-07-05    113.49      106.62   207.90     199.16     17.12    15.994
## 2019-07-08    112.87      106.04   205.75     197.10     17.15    16.022
## 2019-07-09    113.35      106.49   207.77     199.03     17.06    15.938
##          DTE.Close DTE.Adjusted AMZN.Close AMZN.Adjusted AAPL.Close
## 2019-07-01    109.17      101.73   1922.2     1922.2     50.388
## 2019-07-02    110.50      102.97   1934.3     1934.3     50.682
## 2019-07-03    111.57      103.96   1939.0     1939.0     51.103
## 2019-07-05    111.38      103.78   1942.9     1942.9     51.057
## 2019-07-08    111.51      103.91   1952.3     1952.3     50.005
## 2019-07-09    111.68      104.06   1988.3     1988.3     50.310
##          AAPL.Adjusted
## 2019-07-01        49.460
## 2019-07-02        49.750
## 2019-07-03        50.162
## 2019-07-05        50.118
## 2019-07-08        49.085
## 2019-07-09        49.384

```

```

##          AES.Adjusted
## 2019-07-01      15.667
## 2019-07-02      15.835
## 2019-07-03      16.143
## 2019-07-05      15.994
## 2019-07-08      16.022
## 2019-07-09      15.938

```

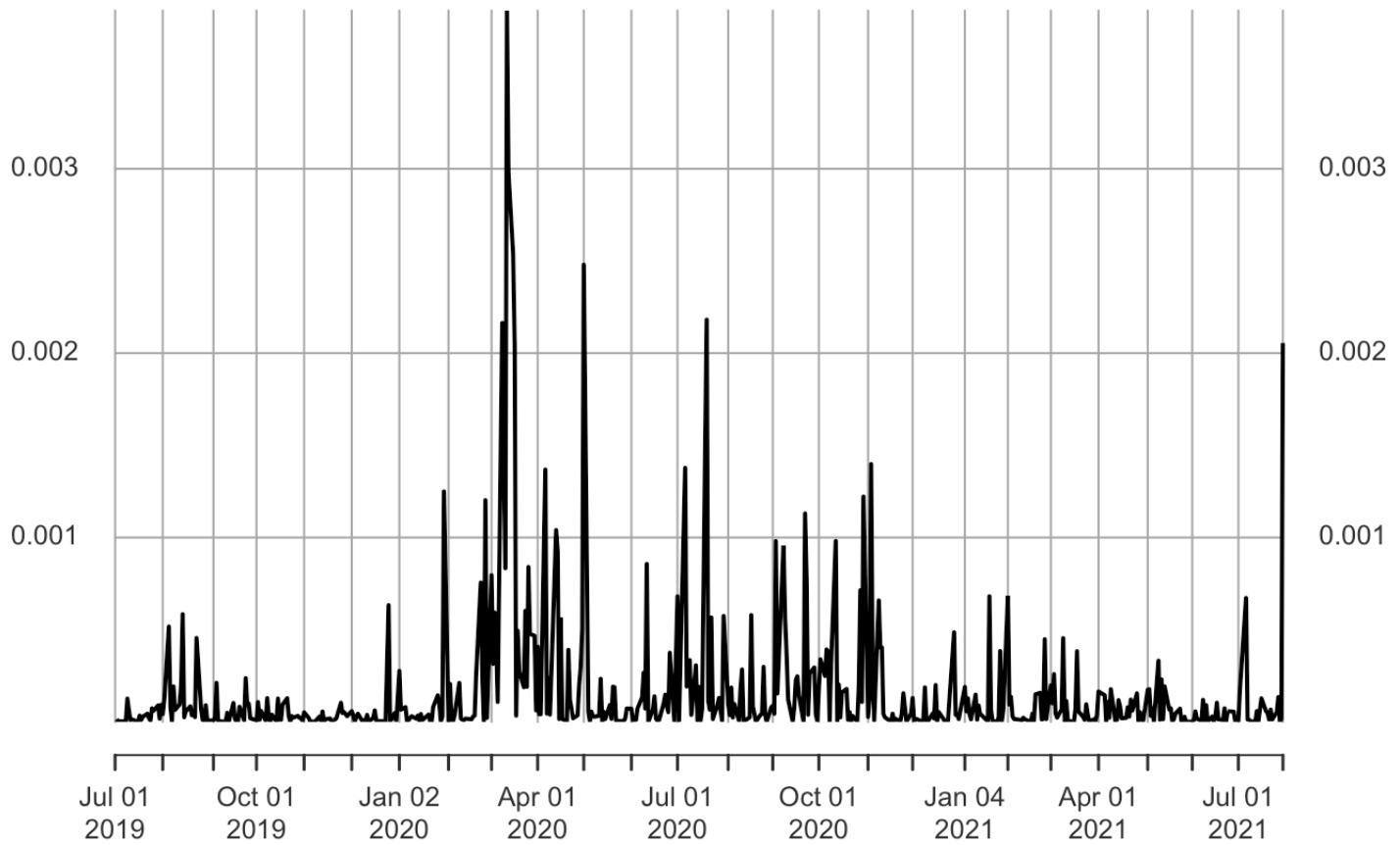
```

##          JPM.Close JPM.Adjusted GS.Close GS.Adjusted AES.Close AES.Adjusted
## 2019-07-01      113.68     106.05    206.86    198.16     16.77      15.667
## 2019-07-02      113.80     106.16    205.98    197.32     16.95      15.835
## 2019-07-03      112.82     105.99    206.04    197.37     17.28      16.143
## 2019-07-05      113.49     106.62    207.90    199.16     17.12      15.994
## 2019-07-08      112.87     106.04    205.75    197.10     17.15      16.022
##          DTE.Close DTE.Adjusted AMZN.Close AMZN.Adjusted AAPL.Close
## 2019-07-01      109.17     101.73    1922.2     1922.2     50.388
## 2019-07-02      110.50     102.97    1934.3     1934.3     50.682
## 2019-07-03      111.57     103.96    1939.0     1939.0     51.103
## 2019-07-05      111.38     103.78    1942.9     1942.9     51.057
## 2019-07-08      111.51     103.91    1952.3     1952.3     50.005
##          AAPL.Adjusted   JPM.Ret   AES.Ret   DTE.Ret   GS.Ret
## 2019-07-01      49.460        NA        NA        NA        NA
## 2019-07-02      49.750  0.0010556  0.0107334  0.0121610 -0.00425424
## 2019-07-03      50.162 -0.0015930  0.0194689  0.0096271  0.00029131
## 2019-07-05      50.118  0.0059389 -0.0092592 -0.0016782  0.00902737
## 2019-07-08      49.085 -0.0054631  0.0017523  0.0012227 -0.01034151
##          AAPL.Ret   AMZN.Ret Port.Tot.Ret Port.Log.Tot.Ret
## 2019-07-01        NA        NA        NA        NA
## 2019-07-02  0.00585471  0.0063054  0.0054670  0.0054521
## 2019-07-03  0.00828697  0.0024246  0.0026140  0.0026106
## 2019-07-05 -0.00088071  0.0020165  0.0024675  0.0024645
## 2019-07-08 -0.02061402  0.0048432  0.0024352  0.0024322

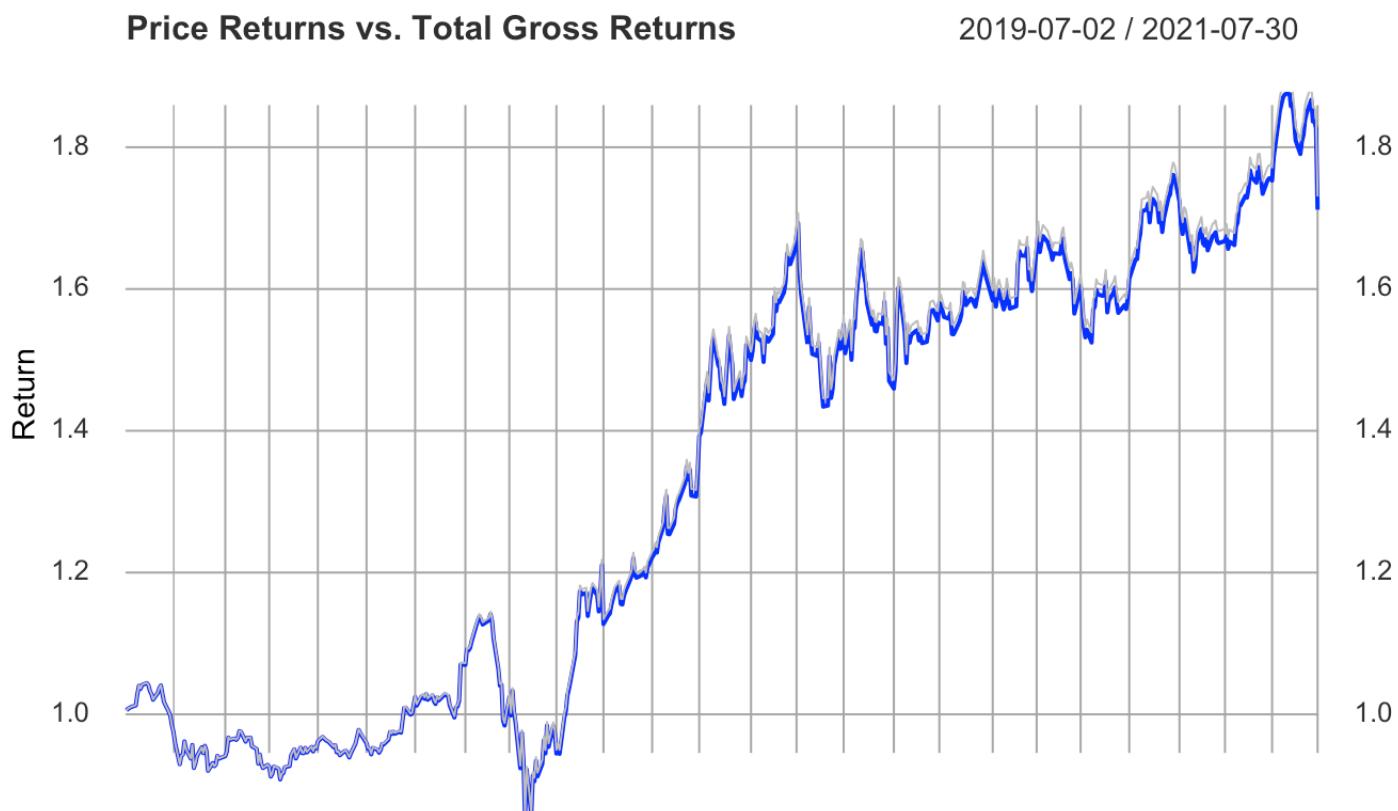
```

LogReturnDifference

2019-07-01 / 2021-07-30



Plot a comparison of Total Price returns and Total Gross returns





Creating a equally weighted portfolio

```
##          JPM.Adjusted GS.Adjusted AES.Adjusted DTE.Adjusted AMZN.Adjusted
## 2019-07-02      106.16    197.32     15.835     102.97    1934.3
## 2019-07-03      105.99    197.37     16.143     103.96    1939.0
## 2019-07-05      106.62    199.16     15.994     103.78    1942.9
## 2019-07-08      106.04    197.10     16.022     103.91    1952.3
## 2019-12-31      132.01    222.89     18.891     104.60    1847.8
##          AAPL.Adjusted   JPM.Ret     GS.Ret     AES.Ret     DTE.Ret
## 2019-07-02      49.750   0.0010556 -0.00425424  0.0107334  0.0121610
## 2019-07-03      50.162 -0.0015930  0.00029131  0.0194689  0.0096271
## 2019-07-05      50.118   0.0059389  0.00902737 -0.0092592 -0.0016782
## 2019-07-08      49.085 -0.0054631 -0.01034151  0.0017523  0.0012227
## 2019-12-31      72.552   0.0055541  0.00056565 -0.0069861  0.0065882
##          AAPL.Ret     AMZN.Ret
## 2019-07-02      0.00585471 0.00630537
## 2019-07-03      0.00828697 0.00242461
## 2019-07-05      -0.00088071 0.00201652
## 2019-07-08      -0.02061402 0.00484321
## 2019-12-31      0.00730656 0.00051435
```

```
##          JPM.Adjusted GS.Adjusted AES.Adjusted DTE.Adjusted AMZN.Adjusted
## 2020-01-02      133.611    227.15     19.015     103.655    1898.0
## 2020-01-03      131.848    224.49     18.796     103.905    1875.0
## 2020-01-06      131.743    226.79     19.015     103.881    1902.9
## 2020-01-07      129.503    228.28     19.081     103.534    1906.9
## 2020-06-30      90.577    193.95     13.993      88.406    2758.8
##          AAPL.Adjusted   JPM.Ret     GS.Ret     AES.Ret     DTE.Ret
## 2020-01-02      74.207   0.01212353  0.0190929  0.0065327 -0.00900897
## 2020-01-03      73.486 -0.01319651 -0.0116935 -0.0114828  0.00240868
## 2020-01-06      74.072 -0.00079507  0.0102341  0.0116162 -0.00023262
## 2020-01-07      73.723 -0.01700065  0.0065825  0.0034947 -0.00333377
## 2020-06-30      90.590   0.01139767  0.0214502  0.0104602  0.00882133
##          AAPL.Ret     AMZN.Ret
## 2020-01-02      0.0228163 0.0271506
## 2020-01-03      -0.0097220 -0.0121391
## 2020-01-06      0.0079683 0.0148856
## 2020-01-07      -0.0047031 0.0020916
## 2020-06-30      0.0083476 0.0292646
```

```

##          JPM.Adjusted GS.Adjusted AES.Adjusted DTE.Adjusted AMZN.Adjusted
## 2020-07-01      89.807    193.90     13.915     90.462    2878.7
## 2020-07-02      90.099    193.73     13.983     90.437    2890.3
## 2020-07-06      92.374    203.51     13.973     89.171    3057.0
## 2020-07-07      89.768    195.65     13.655     88.069    3000.1
## 2020-12-31     124.704    261.79     23.075    101.611    3256.9
##          AAPL.Adjusted   JPM.Ret    GS.Ret    AES.Ret    DTE.Ret
## 2020-07-01      90.418 -0.0085052 -0.00025286 -0.00552099  0.02325569
## 2020-07-02      90.418  0.0032482 -0.00086053  0.00485773 -0.00027258
## 2020-07-06      92.837  0.0252537  0.05045594 -0.00069056 -0.01400385
## 2020-07-07      92.549 -0.0282105 -0.03858024 -0.02280587 -0.01235825
## 2020-12-31     132.267  0.0136408  0.01641929  0.03160671  0.01462484
##          AAPL.Ret    AMZN.Ret
## 2020-07-01 -0.0018915  0.0434533
## 2020-07-02  0.0000000  0.0040296
## 2020-07-06  0.0267502  0.0576895
## 2020-07-07 -0.0031030 -0.0186193
## 2020-12-31 -0.0077027 -0.0088014

```

```

##          JPM.Adjusted GS.Adjusted AES.Adjusted DTE.Adjusted AMZN.Adjusted
## 2021-01-04     123.53    263.07     22.820     99.920    3186.6
## 2021-01-05     124.20    268.96     23.586    100.079    3218.5
## 2021-01-06     130.03    283.48     24.528    101.870    3138.4
## 2021-01-07     134.30    289.53     24.283     99.393    3162.2
## 2021-06-30     154.65    379.53     25.908    110.298    3440.2
##          AAPL.Adjusted   JPM.Ret    GS.Ret    AES.Ret    DTE.Ret    AAPL.Ret
## 2021-01-04      129.00 -0.0094437  0.0048918 -0.011064 -0.01663780 -0.0247192
## 2021-01-05      130.59  0.0054413  0.0223773  0.033563  0.00159138  0.0123637
## 2021-01-06      126.20  0.0469558  0.0539622  0.039967  0.01789596 -0.0336615
## 2021-01-07      130.50  0.0328392  0.0213623 -0.010008 -0.02431804  0.0341233
## 2021-06-30      136.96  0.0090826  0.0185444 -0.011377  0.00084951  0.0046212
##          AMZN.Ret
## 2021-01-04 -0.0215848
## 2021-01-05  0.0100043
## 2021-01-06 -0.0248967
## 2021-01-07  0.0075772
## 2021-06-30 -0.0023143

```

```

##          JPM.Adjusted GS.Adjusted AES.Adjusted DTE.Adjusted AMZN.Adjusted
## 2019-07-02      106.16    197.32     15.835      102.97     1934.3
## 2019-07-03      105.99    197.37     16.143      103.96     1939.0
## 2019-07-05      106.62    199.16     15.994      103.78     1942.9
## 2019-07-08      106.04    197.10     16.022      103.91     1952.3
## 2019-07-09      106.49    199.03     15.938      104.06     1988.3
## 2019-07-10      106.18    197.31     15.872      104.33     2017.4
##          AAPL.Adjusted   JPM.Ret    GS.Ret    AES.Ret    DTE.Ret
## 2019-07-02      49.750  0.0010556 -0.00425424  0.0107334  0.0121610
## 2019-07-03      50.162 -0.0015930  0.00029131  0.0194689  0.0096271
## 2019-07-05      50.118  0.0059389  0.00902737 -0.0092592 -0.0016782
## 2019-07-08      49.085 -0.0054631 -0.01034151  0.0017523  0.0012227
## 2019-07-09      49.384  0.0042526  0.00981784 -0.0052478  0.0014501
## 2019-07-10      49.872 -0.0029114 -0.00866348 -0.0041033  0.0025911
##          AAPL.Ret    AMZN.Ret      JPM        GS        DTE        AES        AAPL        AMZN
## 2019-07-02  0.00585471  0.0063054  1.00106  0.99575  1.0122  1.0107  1.00585  1.0063
## 2019-07-03  0.00828697  0.0024246  0.99946  0.99604  1.0219  1.0304  1.01419  1.0087
## 2019-07-05 -0.00088071  0.0020165  1.00540  1.00503  1.0202  1.0209  1.01330  1.0108
## 2019-07-08 -0.02061402  0.0048432  0.99990  0.99463  1.0214  1.0227  0.99241  1.0157
## 2019-07-09  0.00609952  0.0184294  1.00416  1.00440  1.0229  1.0173  0.99846  1.0344
## 2019-07-10  0.00988855  0.0146406  1.00123  0.99570  1.0256  1.0131  1.00834  1.0495
##          EWPort       EWRet portvalue
## 2019-07-02  1.0053  0.00530930    1.0053
## 2019-07-03  1.0118  0.00644791    1.0118
## 2019-07-05  1.0126  0.00079274    1.0126
## 2019-07-08  1.0078 -0.00474731    1.0078
## 2019-07-09  1.0136  0.00577229    1.0136
## 2019-07-10  1.0156  0.00195157    1.0156

```

Equally-weighted Half yearly performance

2019-07-02 / 2021-06-30



	date	JPM.Close	JPM.Adjusted	GS.Close	GS.Adjusted	AES.Close		
##	## 1	2019-07-02	113.80	106.16	205.98	197.32	16.95	
##	## 2	2019-07-03	112.82	105.99	206.04	197.37	17.28	
##	## 3	2019-07-05	113.49	106.62	207.90	199.16	17.12	
##	## 525	2021-07-30	151.78	151.78	374.88	374.88	23.70	
##	AES.Adjusted	DTE.Close	DTE.Adjusted	AMZN.Close	AMZN.Adjusted	AAPL.Close		
##	## 1	15.835	110.50	102.97	1934.3	1934.3	50.682	
##	## 2	16.143	111.57	103.96	1939.0	1939.0	51.103	
##	## 3	15.994	111.38	103.78	1942.9	1942.9	51.057	
##	## 525	23.700	117.32	117.32	3327.6	3327.6	145.860	
##	AAPL.Adjusted	JPM.Ret	AES.Ret	DTE.Ret	GS.Ret	AAPL.Ret	AMZN.Ret	
##	## 1	49.750	1.00106	1.01073	1.01216	0.99575	1.00585	1.00631
##	## 2	50.162	0.99841	1.01947	1.00963	1.00029	1.00829	1.00242
##	## 3	50.118	1.00594	0.99074	0.99832	1.00903	0.99912	1.00202
##	## 525	145.860	0.99203	0.98263	0.99314	0.99293	1.00151	0.92435
##	Port.Tot.Ret	Port.Log.Tot.Ret	TotalV					
##	## 1	0.0054670	0.0054521	1.0055				
##	## 2	0.0026140	0.0026106	1.0081				
##	## 3	0.0024675	0.0024645	1.0106				
##	## 525	-0.0627447	-0.0647996	1.7303				

```
## [1] "2019-07-01" "2019-07-02" "2019-07-03" "2021-07-01"
```

```
##          date JPM.Close JPM.Adjusted GS.Close GS.Adjusted AES.Close
## 1  2019-07-02     113.80      106.16   205.98    197.32    16.95
## 2  2019-07-03     112.82      105.99   206.04    197.37    17.28
## 3  2019-07-05     113.49      106.62   207.90    199.16    17.12
## 525 2021-07-30     151.78      151.78   374.88    374.88    23.70
##          AES.Adjusted DTE.Close DTE.Adjusted AMZN.Close AMZN.Adjusted AAPL.Close
## 1           15.835     110.50      102.97   1934.3     1934.3     50.682
## 2           16.143     111.57      103.96   1939.0     1939.0     51.103
## 3           15.994     111.38      103.78   1942.9     1942.9     51.057
## 525         23.700     117.32      117.32   3327.6     3327.6    145.860
##          AAPL.Adjusted JPM.Ret AES.Ret DTE.Ret GS.Ret AAPL.Ret AMZN.Ret
## 1           49.750  1.00106  1.01073  1.01216  0.99575  1.00585  1.00631
## 2           50.162  0.99841  1.01947  1.00963  1.00029  1.00829  1.00242
## 3           50.118  1.00594  0.99074  0.99832  1.00903  0.99912  1.00202
## 525         145.860 0.99203  0.98263  0.99314  0.99293  1.00151  0.92435
##          Port.Tot.Ret Port.Log.Tot.Ret TotalV
## 1           0.0054670      0.0054521  1.0055
## 2           0.0026140      0.0026106  1.0081
## 3           0.0024675      0.0024645  1.0106
## 525        -0.0627447     -0.0647996  1.7303
```

```
##          date JPM.Close JPM.Adjusted GS.Close GS.Adjusted AES.Close
## 127 2019-12-31     139.40      132.011   229.93    222.89    19.90
## 252 2020-06-30      94.06      90.577   197.62    193.95    14.49
## 380 2020-12-31     127.07      124.704   263.71    261.79    23.50
## 504 2021-06-30     155.54      154.649   379.53    379.53    26.07
##          AES.Adjusted DTE.Close DTE.Adjusted AMZN.Close AMZN.Adjusted AAPL.Close
## 127       18.891     110.528      104.597   1847.8     1847.8    73.412
## 252       13.993     91.489      88.406   2758.8     2758.8    91.200
## 380       23.075     103.328      101.611   3256.9     3256.9   132.690
## 504       25.908     110.298      110.298   3440.2     3440.2   136.960
##          AAPL.Adjusted JPM.Ret AES.Ret DTE.Ret GS.Ret AAPL.Ret AMZN.Ret Port.Tot.Ret
## 127       72.552  1.0056  0.99301  1.0066  1.0006  1.0073  1.00051  0.00120333
## 252       90.590  1.0114  1.01046  1.0088  1.0215  1.0083  1.02926  0.02703842
## 380      132.267  1.0136  1.03161  1.0146  1.0164  0.9923  0.99120 -0.00557539
## 504      136.960  1.0091  0.98862  1.0008  1.0185  1.0046  0.99769  0.00017601
##          Port.Log.Tot.Ret TotalV
## 127       0.0012026  1.0023
## 252       0.0266793  1.3523
## 380      -0.0055910  1.6297
## 504       0.0001760  1.7748
```

```
## 'data.frame': 4 obs. of 28 variables:  
## $ date : Date, format: "2019-12-31" "2020-06-30" ...  
## $ JPM.Close : num 139.4 94.1 127.1 155.5  
## $ JPM.Adjusted : num 132 90.6 124.7 154.6  
## $ GS.Close : num 230 198 264 380  
## $ GS.Adjusted : num 223 194 262 380  
## $ AES.Close : num 19.9 14.5 23.5 26.1  
## $ AES.Adjusted : num 18.9 14 23.1 25.9  
## $ DTE.Close : num 110.5 91.5 103.3 110.3  
## $ DTE.Adjusted : num 104.6 88.4 101.6 110.3  
## $ AMZN.Close : num 1848 2759 3257 3440  
## $ AMZN.Adjusted : num 1848 2759 3257 3440  
## $ AAPL.Close : num 73.4 91.2 132.7 137  
## $ AAPL.Adjusted : num 72.6 90.6 132.3 137  
## $ JPM.Ret : num 1.01 1.01 1.01 1.01  
## $ AES.Ret : num 0.993 1.01 1.032 0.989  
## $ DTE.Ret : num 1.01 1.01 1.01 1  
## $ GS.Ret : num 1 1.02 1.02 1.02  
## $ AAPL.Ret : num 1.007 1.008 0.992 1.005  
## $ AMZN.Ret : num 1.001 1.029 0.991 0.998  
## $ Port.Tot.Ret : num 0.001203 0.027038 -0.005575 0.000176  
## $ Port.Log.Tot.Ret: num 0.001203 0.026679 -0.005591 0.000176  
## $ TotalV : num 1 1.35 1.63 1.77  
## $ JPM.shout : num 2.99e+09 3.05e+09 3.05e+09 3.08e+09  
## $ GS.shout : num 3.37e+08 3.44e+08 3.44e+08 3.47e+08  
## $ DTE.shout : num 1.94e+08 1.94e+08 1.93e+08 1.92e+08  
## $ AES.shout : num 6.66e+08 6.65e+08 6.65e+08 6.64e+08  
## $ AMZN.shout : num 5.06e+08 5.03e+08 5.01e+08 4.98e+08  
## $ AAPL.shout : num 1.66e+10 1.68e+10 1.71e+10 1.75e+10
```

```

##           date JPM.Close JPM.Adjusted GS.Close GS.Adjusted AES.Close
## 127 2019-12-31     139.40      132.011   229.93    222.89     19.90
## 252 2020-06-30      94.06      90.577   197.62    193.95     14.49
## 380 2020-12-31     127.07     124.704   263.71    261.79     23.50
## 504 2021-06-30     155.54     154.649   379.53    379.53     26.07
##           AES.Adjusted DTE.Close DTE.Adjusted AMZN.Close AMZN.Adjusted AAPL.Close
## 127        18.891    110.528    104.597   1847.8     1847.8    73.412
## 252        13.993    91.489     88.406   2758.8     2758.8    91.200
## 380        23.075   103.328    101.611   3256.9     3256.9   132.690
## 504        25.908    110.298    110.298   3440.2     3440.2   136.960
##           AAPL.Adjusted JPM.Ret AES.Ret DTE.Ret GS.Ret AAPL.Ret AMZN.Ret Port.Tot.Ret
## 127        72.552    1.0056  0.99301  1.0066  1.0006  1.0073  1.00051  0.00120333
## 252        90.590    1.0114  1.01046  1.0088  1.0215  1.0083  1.02926  0.02703842
## 380       132.267    1.0136  1.03161  1.0146  1.0164  0.9923  0.99120 -0.00557539
## 504       136.960    1.0091  0.98862  1.0008  1.0185  1.0046  0.99769  0.00017601
##           Port.Log.Tot.Ret TotalV JPM.shout GS.shout DTE.shout AES.shout AMZN.shout
## 127        0.0012026  1.0023  2.988e+09 337280000 193750000 666330000 5.06e+08
## 252        0.0266793  1.3523  3.049e+09 344090000 193770000 665370000 5.03e+08
## 380       -0.0055910  1.6297  3.048e+09 343940000 192650000 664940000 5.01e+08
## 504       0.0001760  1.7748  3.084e+09 347340000 192210000 664040000 4.98e+08
##           AAPL.shout JPM.mcap DTE.mcap AES.mcap AMZN.mcap GS.mcap
## 127        1.656e+10  4.1653e+11 2.1415e+10 1.3260e+10 9.3501e+11 7.7551e+10
## 252        1.682e+10  2.8679e+11 1.7728e+10 9.6412e+09 1.3877e+12 6.7999e+10
## 380        1.714e+10  3.8731e+11 1.9906e+10 1.5626e+10 1.6317e+12 9.0700e+10
## 504        1.754e+10  4.7969e+11 2.1200e+10 1.7312e+10 1.7132e+12 1.3183e+11
##           AAPL.mcap tot.mcap JPM.wgt GS.wgt AMZN.wgt AAPL.wgt
## 127        1.2157e+12   3841.6 108424186 20186872 243387179 316455872
## 252        1.5340e+12   5699.4 50318882 11930854 243478130 269146918
## 380        2.2743e+12   6778.8 57135242 13379976 240708938 335501985
## 504        2.4023e+12   7154.2 67049099 18426269 239466341 335783896

```

```

##           date AES.Ret DTE.Ret GS.Ret AAPL.Ret
## 184 2019-12-31 0.99301 1.0066 1.0006 1.0073
## 185 2020-01-01 0.99301 1.0066 1.0006 1.0073
## 186 2020-01-02 0.99301 1.0066 1.0006 1.0073
## 732 2021-07-01 0.98862 1.0008 1.0185 1.0046

```

```

## 'data.frame': 549 obs. of 5 variables:
## $ date : Date, format: "2019-12-31" "2020-01-01" ...
## $ AES.Ret : num 0.993 0.993 0.993 0.993 0.993 ...
## $ DTE.Ret : num 1.01 1.01 1.01 1.01 1.01 ...
## $ GS.Ret : num 1 1 1 1 1 ...
## $ AAPL.Ret: num 1.01 1.01 1.01 1.01 1.01 ...
## - attr(*, "na.action")= 'omit' Named int [1:183] 1 2 3 4 5 6 7 8 9 10 ...
## ... attr(*, "names")= chr [1:183] "1" "2" "3" "4" ...

```

a)Construct a variance-covariance matrix

```
##           Delt.1.arithmetic
## 2019-07-01          NA
## 2019-07-02    0.0058547
## 2019-07-03    0.0082870
## 2021-07-30    0.0015106
```

```
##           Delt.1.arithmetic
## 2019-07-01          NA
## 2019-07-02    0.0063054
## 2019-07-03    0.0024246
## 2021-07-30   -0.0756489
```

```
##           Delt.1.arithmetic
## 2019-07-01          NA
## 2019-07-02    0.0121610
## 2019-07-03    0.0096271
## 2021-07-30   -0.0068568
```

```
##           Delt.1.arithmetic
## 2019-07-01          NA
## 2019-07-02    0.010733
## 2019-07-03    0.019469
## 2021-07-30   -0.017372
```

```
##           Delt.1.arithmetic
## 2019-07-01          NA
## 2019-07-02    0.0010556
## 2019-07-03   -0.0015930
## 2021-07-30   -0.0079739
```

```
##           Delt.1.arithmetic
## 2019-07-01          NA
## 2019-07-02   -0.00425424
## 2019-07-03    0.00029131
## 2021-07-30   -0.00707187
```

```
##           AAPL.Ret  AMZN.Ret    JPM.Ret      GS.Ret     AES.Ret     DTE.Ret
## 2019-07-02  0.00585471 0.0063054  0.0010556 -0.00425424  0.0107334  0.0121610
## 2019-07-03  0.00828697 0.0024246 -0.0015930  0.00029131  0.0194689  0.0096271
## 2019-07-05 -0.00088071 0.0020165  0.0059389  0.00902737 -0.0092592 -0.0016782
```

```
## [,1] [,2] [,3] [,4] [,5] [,6]
## [1,] 0.2  0.15 0.05 0.15 0.25 0.2
```

```

##      [,1]
## [1,] 0.20
## [2,] 0.15
## [3,] 0.05
## [4,] 0.15
## [5,] 0.25
## [6,] 0.20

```

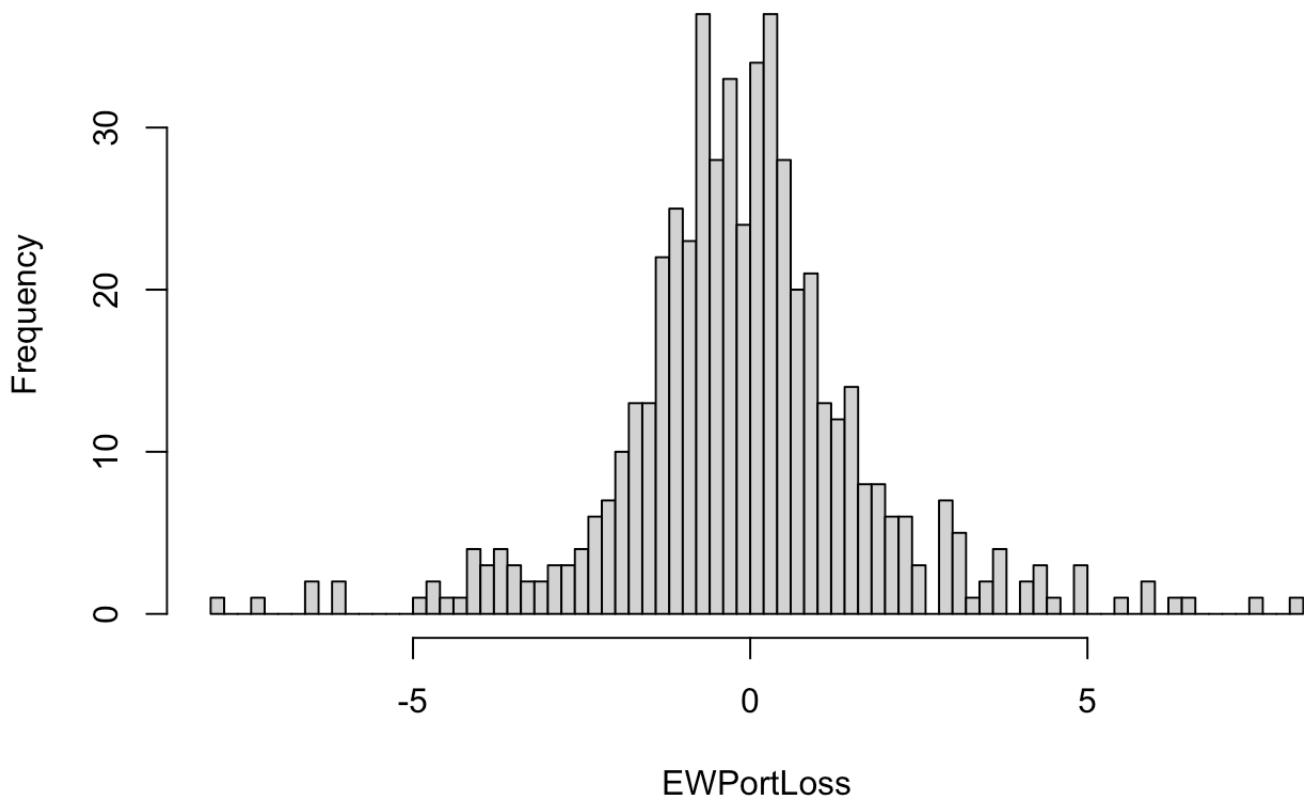
	AAPL.Ret	AMZN.Ret	JPM.Ret	GS.Ret	AES.Ret	DTE.Ret
## 2019-07-02	0.00585471	0.0063054	0.0010556	-0.00425424	0.0107334	0.0121610
## 2019-07-03	0.00828697	0.0024246	-0.0015930	0.00029131	0.0194689	0.0096271
## 2019-07-05	-0.00088071	0.0020165	0.0059389	0.00902737	-0.0092592	-0.0016782
## 2019-07-08	-0.02061402	0.0048432	-0.0054631	-0.01034151	0.0017523	0.0012227
## 2019-07-09	0.00609952	0.0184294	0.0042526	0.00981784	-0.0052478	0.0014501
## 2019-07-10	0.00988855	0.0146406	-0.0029114	-0.00866348	-0.0041033	0.0025911

	AAPL.Ret	AMZN.Ret	JPM.Ret	GS.Ret	AES.Ret	DTE.Ret
## AAPL.Ret	0.00054407	0.00030735	0.00028334	0.00032021	0.00027041	0.00024709
## AMZN.Ret	0.00030735	0.00038820	0.00011764	0.00015787	0.00012968	0.00011096
## JPM.Ret	0.00028334	0.00011764	0.00065231	0.00056782	0.00046839	0.00039458
## GS.Ret	0.00032021	0.00015787	0.00056782	0.00064013	0.00044095	0.00036851
## AES.Ret	0.00027041	0.00012968	0.00046839	0.00044095	0.00080544	0.00045105
## DTE.Ret	0.00024709	0.00011096	0.00039458	0.00036851	0.00045105	0.00048587

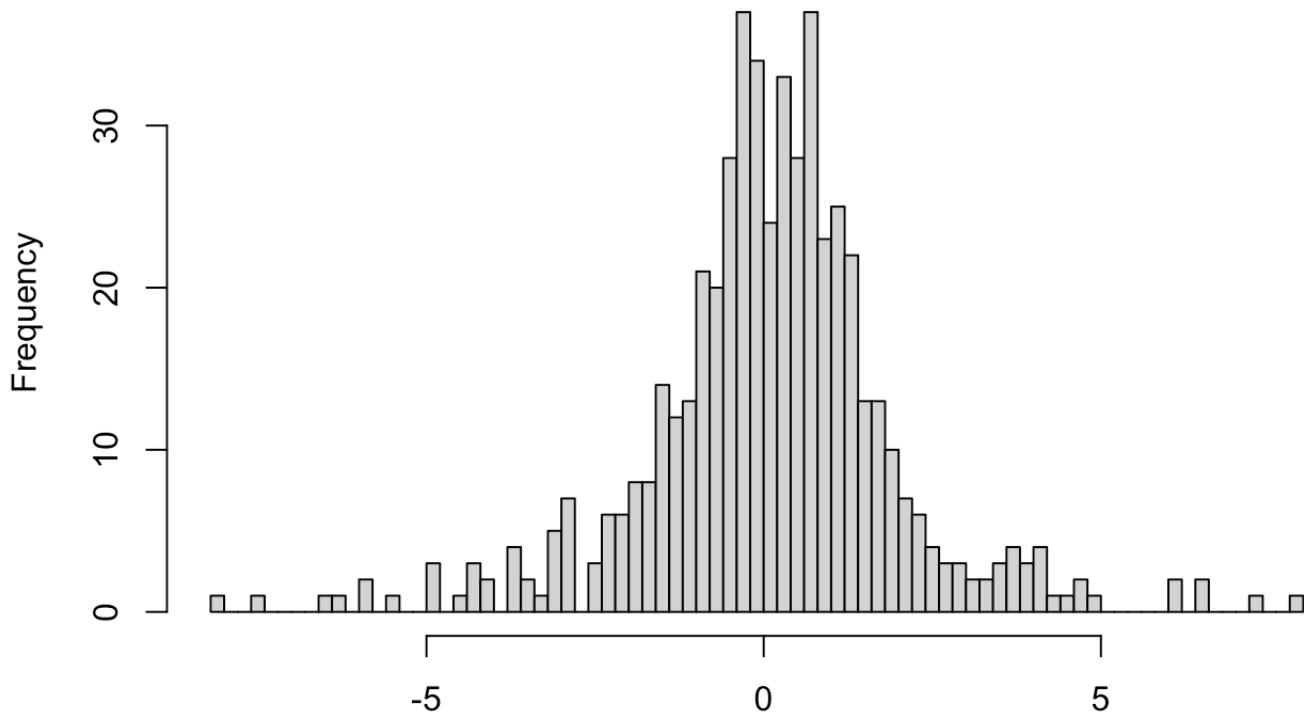
	AAPL.Ret	AMZN.Ret	JPM.Ret	GS.Ret	AES.Ret	DTE.Ret
## AAPL.Ret	0.27421	0.154906	0.142804	0.161384	0.136284	0.124534
## AMZN.Ret	0.15491	0.195655	0.059289	0.079566	0.065359	0.055926
## JPM.Ret	0.14280	0.059289	0.328763	0.286180	0.236068	0.198869
## GS.Ret	0.16138	0.079566	0.286180	0.322623	0.222239	0.185727
## AES.Ret	0.13628	0.065359	0.236068	0.222239	0.405941	0.227327
## DTE.Ret	0.12453	0.055926	0.198869	0.185727	0.227327	0.244880

Equally Weighted portfolio

Histogram of EWPortLoss



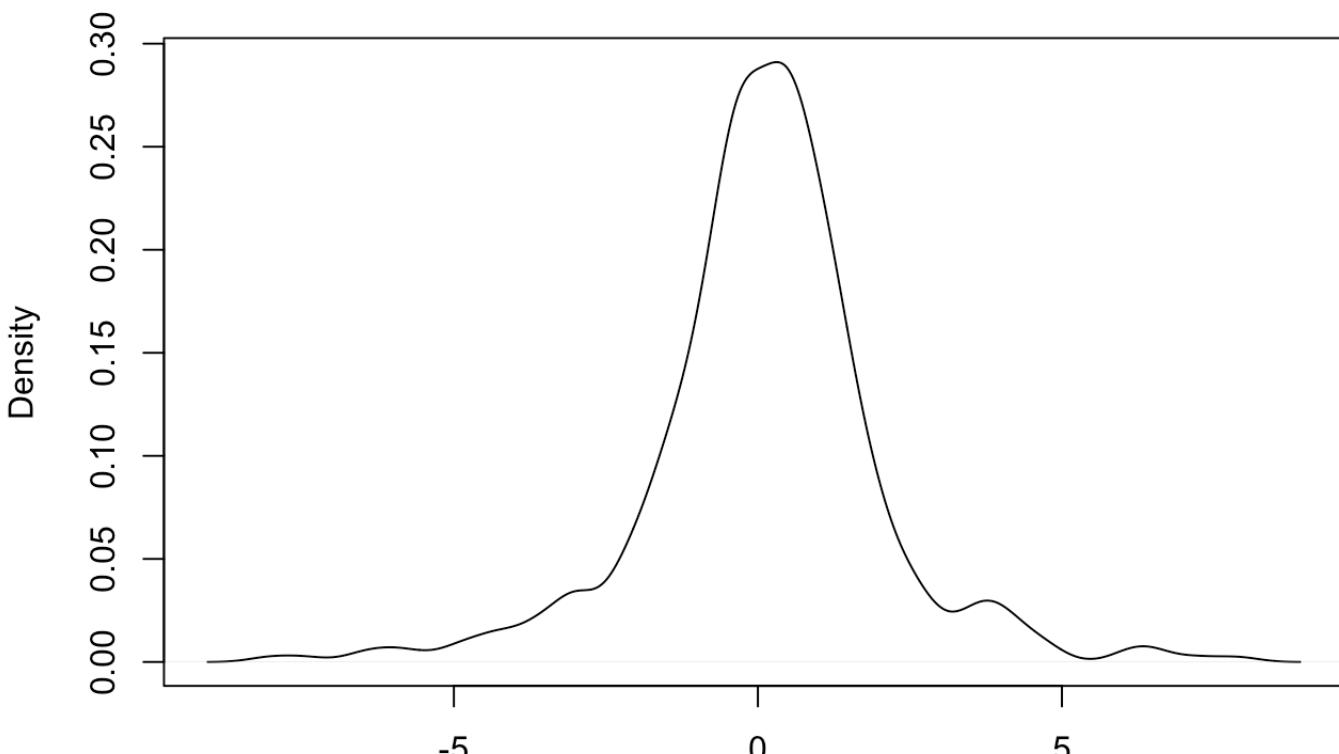
Histogram of EWPortRet



EWPortRet

```
## Time Series:  
##   Name:          object  
##   Data Matrix:  
##     Dimension:    526 1  
##   Column Names:  SS.1  
##   Row Names:     ...  
##   Positions:  
##   Start:  
##   End:  
##   With:  
##   Format:        counts  
##   FinCenter:  
##   Units:         SS.1  
##   Title:         Signal Series Object  
##   Documentation: Sat Aug  7 00:55:23 2021
```

density.default(x = EWPortTimeS, na.rm = TRUE)



N = 525 Bandwidth = 0.3404

```
## [1] "Llh: -1.06810785299651E+03; Pars:  1.000000E+00,  5.000000E-01,  1.733995E-01  
, 1.320976E+00,  0.000000E+00"  
## [1] "Llh: -1.06867133639430E+03; Pars:  1.100000E+00,  5.000000E-01,  1.733995E-01
```

```

, 1.320976E+00, 0.000000E+00"
## [1] "Llh: -1.06818839248668E+03; Pars: 1.000000E+00, 5.525855E-01, 1.733995E-01
, 1.320976E+00, 0.000000E+00"
## [1] "Llh: -1.07058141292037E+03; Pars: 1.000000E+00, 5.000000E-01, 2.733995E-01
, 1.320976E+00, 0.000000E+00"
## [1] "Llh: -1.05003986865477E+03; Pars: 1.000000E+00, 5.000000E-01, 1.733995E-01
, 1.459904E+00, 0.000000E+00"
## [1] "Llh: -1.07197383360933E+03; Pars: 1.000000E+00, 5.000000E-01, 1.733995E-01
, 1.320976E+00, 1.000000E-01"
## [1] "Llh: -1.05927708426710E+03; Pars: 1.040000E+00, 5.204054E-01, 2.133995E-01
, 1.374886E+00, -1.000000E-01"
## [1] "Llh: -1.06141617615431E+03; Pars: 1.030000E+00, 5.152273E-01, 2.033995E-01
, 1.361206E+00, -5.000000E-02"
## [1] "Llh: -1.05812003833053E+03; Pars: 1.056000E+00, 5.287988E-01, 8.939950E-02
, 1.397061E+00, -4.000000E-02"
## [1] "Llh: -1.05959052937030E+03; Pars: 1.042000E+00, 5.214472E-01, 1.353995E-01
, 1.377639E+00, -3.000000E-02"
## [1] "Llh: -1.05268561920268E+03; Pars: 9.384000E-01, 5.407776E-01, 1.557995E-01
, 1.428709E+00, -5.600000E-02"
## [1] "Llh: -1.05603795981565E+03; Pars: 9.788000E-01, 5.302816E-01, 1.601995E-01
, 1.400979E+00, -4.200000E-02"
## [1] "Llh: -1.04857875897249E+03; Pars: 1.013760E+00, 4.851063E-01, 1.487595E-01
, 1.474223E+00, -7.840000E-02"
## [1] "Llh: -1.04301383252053E+03; Pars: 1.020640E+00, 4.545228E-01, 1.364395E-01
, 1.557389E+00, -1.176000E-01"
## [1] "Llh: -1.04230926065047E+03; Pars: 1.022016E+00, 5.160605E-01, 1.339755E-01
, 1.574577E+00, -1.254400E-01"
## [1] "Llh: -1.03916485680695E+03; Pars: 1.033024E+00, 5.242833E-01, 1.142635E-01
, 1.719090E+00, -1.881600E-01"
## [1] "Llh: -1.03951155700864E+03; Pars: 9.792256E-01, 4.973001E-01, 5.432110E-02
, 1.654265E+00, -6.070400E-02"
## [1] "Llh: -1.04196040958699E+03; Pars: 9.944192E-01, 5.029784E-01, 9.409070E-02
, 1.579503E+00, -7.052800E-02"
## [1] "Llh: -1.03525380924625E+03; Pars: 9.325158E-01, 4.775305E-01, 1.642897E-01
, 1.741855E+00, -1.289856E-01"
## [1] "Llh: -1.03516922710319E+03; Pars: 8.707738E-01, 4.537915E-01, 2.017349E-01
, 1.944959E+00, -1.734784E-01"
## [1] "Llh: -1.03744274028587E+03; Pars: 1.023065E+00, 4.353193E-01, 1.162639E-01
, 1.926950E+00, -1.599770E-01"
## [1] "Llh: -1.03597617309508E+03; Pars: 1.001899E+00, 4.595795E-01, 1.261478E-01
, 1.788088E+00, -1.339827E-01"
## [1] "Llh: -1.04400156571277E+03; Pars: 9.622249E-01, 4.552111E-01, 7.976320E-02
, 2.045105E+00, -2.695700E-01"
## [1] "Llh: -1.03824987938038E+03; Pars: 9.716687E-01, 4.660174E-01, 1.031723E-01
, 1.879827E+00, -2.021775E-01"
## [1] "Llh: -1.04151170401934E+03; Pars: 9.219964E-01, 5.057848E-01, 1.034163E-01
, 2.066955E+00, -1.858011E-01"
## [1] "Llh: -1.03759350168514E+03; Pars: 9.466573E-01, 4.924513E-01, 1.116721E-01
, 1.925740E+00, -1.687508E-01"
## [1] "Llh: -1.04058194756045E+03; Pars: 9.503835E-01, 4.604694E-01, 2.084751E-01

```

```

, 2.067856E+00, -2.859158E-01"
## [1] "Llh: -1.03699028043397E+03; Pars: 9.720151E-01, 4.878251E-01, 9.285961E-02
, 1.749177E+00, -1.170069E-01"
## [1] "Llh: -1.03663327222985E+03; Pars: 8.721816E-01, 4.243582E-01, 1.399712E-01
, 2.003737E+00, -1.299986E-01"
## [1] "Llh: -1.03599277838022E+03; Pars: 9.123922E-01, 4.473948E-01, 1.335442E-01
, 1.928436E+00, -1.445389E-01"
## [1] "Llh: -1.03429228634083E+03; Pars: 9.098262E-01, 4.696907E-01, 1.632112E-01
, 1.851214E+00, -9.292558E-02"
## [1] "Llh: -1.03405779698198E+03; Pars: 8.789050E-01, 4.715382E-01, 1.932306E-01
, 1.837071E+00, -3.829960E-02"
## [1] "Llh: -1.03407667576092E+03; Pars: 9.077367E-01, 4.368299E-01, 1.873347E-01
, 1.773324E+00, -7.417184E-02"
## [1] "Llh: -1.03414617118369E+03; Pars: 9.174668E-01, 4.501166E-01, 1.684191E-01
, 1.810258E+00, -9.781658E-02"
## [1] "Llh: -1.03487479606091E+03; Pars: 8.566676E-01, 4.219206E-01, 2.439373E-01
, 1.963060E+00, -1.087816E-01"
## [1] "Llh: -1.03420919347236E+03; Pars: 8.855044E-01, 4.375111E-01, 2.061679E-01
, 1.907254E+00, -1.108380E-01"
## [1] "Llh: -1.03432169933500E+03; Pars: 9.055354E-01, 4.559562E-01, 2.323021E-01
, 1.772734E+00, -6.776929E-02"
## [1] "Llh: -1.03388994511414E+03; Pars: 9.072496E-01, 4.538006E-01, 2.076126E-01
, 1.810439E+00, -8.696170E-02"
## [1] "Llh: -1.03465401298510E+03; Pars: 7.781688E-01, 4.416267E-01, 2.722845E-01
, 1.921401E+00, -5.951708E-02"
## [1] "Llh: -1.03390543238509E+03; Pars: 8.341013E-01, 4.460480E-01, 2.357503E-01
, 1.887168E+00, -7.813349E-02"
## [1] "Llh: -1.03561388492386E+03; Pars: 8.946250E-01, 4.441909E-01, 2.103036E-01
, 1.745245E+00, 1.811656E-02"
## [1] "Llh: -1.03411276526682E+03; Pars: 8.767366E-01, 4.513721E-01, 2.038770E-01
, 1.892984E+00, -1.255797E-01"
## [1] "Llh: -1.03416357605600E+03; Pars: 8.763872E-01, 4.665038E-01, 2.049543E-01
, 1.774408E+00, -5.042054E-02"
## [1] "Llh: -1.03385375227485E+03; Pars: 8.786665E-01, 4.590803E-01, 2.052577E-01
, 1.806726E+00, -6.552490E-02"
## [1] "Llh: -1.03487521583180E+03; Pars: 8.859271E-01, 4.552512E-01, 2.077973E-01
, 1.754743E+00, -1.165695E-02"
## [1] "Llh: -1.03379651018800E+03; Pars: 8.790342E-01, 4.523388E-01, 2.048571E-01
, 1.857435E+00, -9.709898E-02"
## [1] "Llh: -1.03442932295887E+03; Pars: 8.434460E-01, 4.770173E-01, 2.313486E-01
, 1.908194E+00, -7.223563E-02"
## [1] "Llh: -1.03382001001251E+03; Pars: 8.916640E-01, 4.465476E-01, 1.983382E-01
, 1.806120E+00, -7.368778E-02"
## [1] "Llh: -1.03356064175542E+03; Pars: 8.773813E-01, 4.323843E-01, 2.274958E-01
, 1.829502E+00, -1.222631E-01"
## [1] "Llh: -1.03351883241410E+03; Pars: 8.766194E-01, 4.140439E-01, 2.446284E-01
, 1.825730E+00, -1.642449E-01"
## [1] "Llh: -1.03450582807109E+03; Pars: 9.391922E-01, 4.436812E-01, 1.885273E-01
, 1.757513E+00, -1.168738E-01"
## [1] "Llh: -1.03368193585424E+03; Pars: 8.603740E-01, 4.454551E-01, 2.239446E-01

```

```

, 1.853884E+00, -8.781857E-02"
## [1] "Llh: -1.03345210883611E+03; Pars: 8.472937E-01, 4.328756E-01, 2.231977E-01
, 1.849459E+00, -1.083884E-01"
## [1] "Llh: -1.03332019592771E+03; Pars: 8.173157E-01, 4.227777E-01, 2.309903E-01
, 1.869283E+00, -1.191017E-01"
## [1] "Llh: -1.03355091120014E+03; Pars: 8.513364E-01, 4.140273E-01, 2.358457E-01
, 1.878666E+00, -1.512559E-01"
## [1] "Llh: -1.03350875256686E+03; Pars: 8.581690E-01, 4.248581E-01, 2.281987E-01
, 1.860417E+00, -1.298231E-01"
## [1] "Llh: -1.03362796584871E+03; Pars: 8.249409E-01, 4.172538E-01, 2.547094E-01
, 1.901693E+00, -1.655471E-01"
## [1] "Llh: -1.03351793551609E+03; Pars: 8.416217E-01, 4.243920E-01, 2.406166E-01
, 1.877336E+00, -1.425823E-01"
## [1] "Llh: -1.03322431131916E+03; Pars: 8.226057E-01, 4.015370E-01, 2.624943E-01
, 1.857056E+00, -1.603293E-01"
## [1] "Llh: -1.03311520415594E+03; Pars: 7.943915E-01, 3.783176E-01, 2.913129E-01
, 1.856867E+00, -1.919444E-01"
## [1] "Llh: -1.03329519794356E+03; Pars: 8.148729E-01, 3.819499E-01, 2.703542E-01
, 1.861810E+00, -2.112600E-01"
## [1] "Llh: -1.03327179479465E+03; Pars: 8.262482E-01, 3.969226E-01, 2.587518E-01
, 1.859825E+00, -1.803997E-01"
## [1] "Llh: -1.03331753891592E+03; Pars: 7.784790E-01, 4.040432E-01, 2.553197E-01
, 1.904564E+00, -1.412956E-01"
## [1] "Llh: -1.03327597109297E+03; Pars: 8.030141E-01, 4.065205E-01, 2.526469E-01
, 1.884542E+00, -1.470329E-01"
## [1] "Llh: -1.03305436723921E+03; Pars: 7.980337E-01, 3.874656E-01, 2.641436E-01
, 1.855050E+00, -1.647384E-01"
## [1] "Llh: -1.03294393894930E+03; Pars: 7.762397E-01, 3.702254E-01, 2.759071E-01
, 1.844006E+00, -1.758165E-01"
## [1] "Llh: -1.03294258572286E+03; Pars: 7.487147E-01, 3.663071E-01, 2.956448E-01
, 1.865298E+00, -1.958949E-01"
## [1] "Llh: -1.03300780403005E+03; Pars: 6.939876E-01, 3.401309E-01, 3.293679E-01
, 1.867744E+00, -2.289308E-01"
## [1] "Llh: -1.03313933406973E+03; Pars: 7.621276E-01, 3.475925E-01, 3.187151E-01
, 1.854866E+00, -2.373336E-01"
## [1] "Llh: -1.03305278414688E+03; Pars: 7.759246E-01, 3.650319E-01, 2.967839E-01
, 1.858460E+00, -2.077757E-01"
## [1] "Llh: -1.03316163645261E+03; Pars: 7.655934E-01, 3.462577E-01, 3.147133E-01
, 1.829620E+00, -2.336996E-01"
## [1] "Llh: -1.03305136288289E+03; Pars: 7.749486E-01, 3.604294E-01, 2.991967E-01
, 1.843199E+00, -2.120329E-01"
## [1] "Llh: -1.03304553674710E+03; Pars: 7.218395E-01, 3.412100E-01, 3.247864E-01
, 1.847288E+00, -2.129861E-01"
## [1] "Llh: -1.03298579747823E+03; Pars: 7.479416E-01, 3.543585E-01, 3.082777E-01
, 1.850414E+00, -2.048395E-01"
## [1] "Llh: -1.03289994164997E+03; Pars: 7.351162E-01, 3.487431E-01, 2.990112E-01
, 1.847656E+00, -2.065994E-01"
## [1] "Llh: -1.03288231369709E+03; Pars: 7.054785E-01, 3.348345E-01, 3.028604E-01
, 1.843068E+00, -2.139268E-01"
## [1] "Llh: -1.03285949078519E+03; Pars: 7.254047E-01, 3.491653E-01, 2.959708E-01

```

```

, 1.839942E+00, -1.932286E-01"
## [1] "Llh: -1.03284545236078E+03; Pars: 7.001447E-01, 3.414925E-01, 2.955642E-01
, 1.830752E+00, -1.859550E-01"
## [1] "Llh: -1.03275264291229E+03; Pars: 6.964592E-01, 3.460717E-01, 2.921050E-01
, 1.850155E+00, -1.785402E-01"
## [1] "Llh: -1.03268899681470E+03; Pars: 6.572145E-01, 3.391088E-01, 2.885592E-01
, 1.853643E+00, -1.617939E-01"
## [1] "Llh: -1.03266026257182E+03; Pars: 6.871752E-01, 3.458613E-01, 2.751366E-01
, 1.844225E+00, -1.685154E-01"
## [1] "Llh: -1.03257060211452E+03; Pars: 6.567920E-01, 3.416894E-01, 2.585660E-01
, 1.841138E+00, -1.503533E-01"
## [1] "Llh: -1.03277476036389E+03; Pars: 6.110981E-01, 3.205861E-01, 3.005708E-01
, 1.849483E+00, -1.873531E-01"
## [1] "Llh: -1.03271495473863E+03; Pars: 6.523835E-01, 3.323342E-01, 2.944049E-01
, 1.848112E+00, -1.844690E-01"
## [1] "Llh: -1.03294388693243E+03; Pars: 6.000905E-01, 3.116430E-01, 2.803371E-01
, 1.821614E+00, -1.627043E-01"
## [1] "Llh: -1.03277502858242E+03; Pars: 7.115587E-01, 3.518021E-01, 2.918179E-01
, 1.854280E+00, -1.875973E-01"
## [1] "Llh: -1.03260503622859E+03; Pars: 6.457588E-01, 3.477442E-01, 2.687045E-01
, 1.848063E+00, -1.341406E-01"
## [1] "Llh: -1.03263491106624E+03; Pars: 6.606887E-01, 3.444708E-01, 2.772435E-01
, 1.846813E+00, -1.540871E-01"
## [1] "Llh: -1.03249404913688E+03; Pars: 6.293383E-01, 3.434475E-01, 2.652567E-01
, 1.867514E+00, -1.413866E-01"
## [1] "Llh: -1.03240722667136E+03; Pars: 5.939351E-01, 3.444293E-01, 2.501030E-01
, 1.886170E+00, -1.191023E-01"
## [1] "Llh: -1.03254030800153E+03; Pars: 5.708749E-01, 3.305703E-01, 2.523171E-01
, 1.856436E+00, -1.123464E-01"
## [1] "Llh: -1.03252551254649E+03; Pars: 6.060458E-01, 3.357550E-01, 2.621923E-01
, 1.855897E+00, -1.311591E-01"
## [1] "Llh: -1.03246816747898E+03; Pars: 6.115150E-01, 3.513711E-01, 2.368451E-01
, 1.865767E+00, -9.415071E-02"
## [1] "Llh: -1.03248361198117E+03; Pars: 6.217321E-01, 3.465120E-01, 2.512351E-01
, 1.861337E+00, -1.167303E-01"
## [1] "Llh: -1.03238054318840E+03; Pars: 5.884042E-01, 3.492794E-01, 2.220052E-01
, 1.865057E+00, -8.976852E-02"
## [1] "Llh: -1.03238217454137E+03; Pars: 5.539991E-01, 3.544785E-01, 1.887282E-01
, 1.870791E+00, -5.375584E-02"
## [1] "Llh: -1.03234147343226E+03; Pars: 5.769180E-01, 3.412066E-01, 2.231802E-01
, 1.877550E+00, -9.967303E-02"
## [1] "Llh: -1.03232156166685E+03; Pars: 5.424976E-01, 3.379840E-01, 2.004180E-01
, 1.892469E+00, -8.243926E-02"
## [1] "Llh: -1.03240943218393E+03; Pars: 5.201671E-01, 3.457415E-01, 2.100594E-01
, 1.905455E+00, -5.629463E-02"
## [1] "Llh: -1.03236888506129E+03; Pars: 5.543233E-01, 3.447240E-01, 2.221861E-01
, 1.889169E+00, -7.980930E-02"
## [1] "Llh: -1.03237440985134E+03; Pars: 5.502243E-01, 3.555824E-01, 1.904306E-01
, 1.903786E+00, -5.494896E-02"
## [1] "Llh: -1.03234429398564E+03; Pars: 5.641797E-01, 3.505184E-01, 2.083711E-01

```

```

, 1.891699E+00, -7.400149E-02"
## [1] "Llh: -1.03229276137198E+03; Pars: 5.258210E-01, 3.394490E-01, 2.043882E-01
, 1.904200E+00, -8.389765E-02"
## [1] "Llh: -1.03233044562052E+03; Pars: 4.829740E-01, 3.336405E-01, 1.881597E-01
, 1.923712E+00, -7.877112E-02"
## [1] "Llh: -1.03239471954157E+03; Pars: 5.161552E-01, 3.442788E-01, 1.728444E-01
, 1.890783E+00, -4.486417E-02"
## [1] "Llh: -1.03233768161248E+03; Pars: 5.356002E-01, 3.443164E-01, 1.921591E-01
, 1.889628E+00, -6.342371E-02"
## [1] "Llh: -1.03235926256555E+03; Pars: 5.005645E-01, 3.375603E-01, 1.890038E-01
, 1.922224E+00, -6.366005E-02"
## [1] "Llh: -1.03232613569381E+03; Pars: 5.225244E-01, 3.404527E-01, 1.972541E-01
, 1.907770E+00, -7.018716E-02"
## [1] "Llh: -1.03235369889980E+03; Pars: 5.219258E-01, 3.403195E-01, 1.788501E-01
, 1.905143E+00, -6.977041E-02"
## [1] "Llh: -1.03232292746471E+03; Pars: 5.300252E-01, 3.414153E-01, 1.896841E-01
, 1.901137E+00, -7.228013E-02"
## [1] "Llh: -1.03235426692840E+03; Pars: 4.984077E-01, 3.311894E-01, 1.851903E-01
, 1.906386E+00, -7.488968E-02"
## [1] "Llh: -1.03232103409656E+03; Pars: 5.477367E-01, 3.455829E-01, 2.025759E-01
, 1.895360E+00, -7.422354E-02"
## [1] "Llh: -1.03230990897354E+03; Pars: 5.318418E-01, 3.376504E-01, 2.055691E-01
, 1.910789E+00, -8.978739E-02"
## [1] "Llh: -1.03230798412588E+03; Pars: 5.327814E-01, 3.393047E-01, 2.022166E-01
, 1.905476E+00, -8.319647E-02"
## [1] "Llh: -1.03230370242429E+03; Pars: 5.490203E-01, 3.410213E-01, 2.024590E-01
, 1.891707E+00, -8.822766E-02"
## [1] "Llh: -1.03230471106786E+03; Pars: 5.423963E-01, 3.408791E-01, 2.011578E-01
, 1.895710E+00, -8.371753E-02"
## [1] "Llh: -1.03230499156175E+03; Pars: 5.491176E-01, 3.399028E-01, 2.151389E-01
, 1.894536E+00, -9.251370E-02"
## [1] "Llh: -1.03230304753741E+03; Pars: 5.443445E-01, 3.402803E-01, 2.087752E-01
, 1.896184E+00, -8.745531E-02"
## [1] "Llh: -1.03229256162435E+03; Pars: 5.373839E-01, 3.442848E-01, 2.077479E-01
, 1.904707E+00, -8.436099E-02"
## [1] "Llh: -1.03229285546941E+03; Pars: 5.348270E-01, 3.474791E-01, 2.114129E-01
, 1.910855E+00, -8.532185E-02"
## [1] "Llh: -1.03228993995506E+03; Pars: 5.280037E-01, 3.362080E-01, 2.076589E-01
, 1.905547E+00, -9.663169E-02"
## [1] "Llh: -1.03229960148947E+03; Pars: 5.181373E-01, 3.316163E-01, 2.102004E-01
, 1.910661E+00, -1.078358E-01"
## [1] "Llh: -1.03228069525312E+03; Pars: 5.410480E-01, 3.411753E-01, 2.101951E-01
, 1.895459E+00, -9.303285E-02"
## [1] "Llh: -1.03227303329908E+03; Pars: 5.451813E-01, 3.421145E-01, 2.141844E-01
, 1.890470E+00, -9.795104E-02"
## [1] "Llh: -1.03228247211068E+03; Pars: 5.232734E-01, 3.398927E-01, 2.146429E-01
, 1.908755E+00, -9.189101E-02"
## [1] "Llh: -1.03228251891877E+03; Pars: 5.297102E-01, 3.401745E-01, 2.115969E-01
, 1.904479E+00, -9.097517E-02"
## [1] "Llh: -1.03226428704998E+03; Pars: 5.195209E-01, 3.404777E-01, 2.106736E-01

```

```

, 1.909289E+00, -9.443764E-02"
## [1] "Llh: -1.03225220415727E+03; Pars: 5.071090E-01, 3.405765E-01, 2.116229E-01
, 1.915875E+00, -9.792881E-02"
## [1] "Llh: -1.03225803811878E+03; Pars: 5.305596E-01, 3.417646E-01, 2.179546E-01
, 1.905906E+00, -1.036078E-01"
## [1] "Llh: -1.03226419480684E+03; Pars: 5.293749E-01, 3.411842E-01, 2.145630E-01
, 1.905479E+00, -9.868024E-02"
## [1] "Llh: -1.03225707995267E+03; Pars: 5.162669E-01, 3.359753E-01, 2.186775E-01
, 1.905879E+00, -1.108431E-01"
## [1] "Llh: -1.03225933387708E+03; Pars: 5.215462E-01, 3.380337E-01, 2.159451E-01
, 1.905586E+00, -1.042226E-01"
## [1] "Llh: -1.03223698417345E+03; Pars: 5.209524E-01, 3.439513E-01, 2.231740E-01
, 1.905170E+00, -1.042570E-01"
## [1] "Llh: -1.03222463508367E+03; Pars: 5.174267E-01, 3.478896E-01, 2.309316E-01
, 1.904982E+00, -1.080697E-01"
## [1] "Llh: -1.03221974361829E+03; Pars: 5.233440E-01, 3.434020E-01, 2.227055E-01
, 1.900464E+00, -1.154692E-01"
## [1] "Llh: -1.03220670523663E+03; Pars: 5.233793E-01, 3.451703E-01, 2.267368E-01
, 1.896331E+00, -1.272582E-01"
## [1] "Llh: -1.03221824500046E+03; Pars: 4.927153E-01, 3.423877E-01, 2.281849E-01
, 1.921223E+00, -1.211320E-01"
## [1] "Llh: -1.03222050410748E+03; Pars: 5.058318E-01, 3.423193E-01, 2.246848E-01
, 1.913488E+00, -1.153368E-01"
## [1] "Llh: -1.03219145906263E+03; Pars: 4.921993E-01, 3.429880E-01, 2.285069E-01
, 1.911775E+00, -1.224850E-01"
## [1] "Llh: -1.03217081242475E+03; Pars: 4.730192E-01, 3.436013E-01, 2.337831E-01
, 1.914716E+00, -1.319236E-01"
## [1] "Llh: -1.03215879098884E+03; Pars: 4.891929E-01, 3.520445E-01, 2.338262E-01
, 1.915343E+00, -1.236818E-01"
## [1] "Llh: -1.03212950093362E+03; Pars: 4.756558E-01, 3.603651E-01, 2.414005E-01
, 1.920093E+00, -1.301011E-01"
## [1] "Llh: -1.03215252076733E+03; Pars: 4.857695E-01, 3.552234E-01, 2.527919E-01
, 1.907026E+00, -1.494650E-01"
## [1] "Llh: -1.03215823460329E+03; Pars: 4.911044E-01, 3.515036E-01, 2.424996E-01
, 1.909234E+00, -1.365810E-01"
## [1] "Llh: -1.03215700673763E+03; Pars: 4.627889E-01, 3.506702E-01, 2.422273E-01
, 1.918754E+00, -1.558823E-01"
## [1] "Llh: -1.03215301123691E+03; Pars: 4.764484E-01, 3.499729E-01, 2.394034E-01
, 1.915301E+00, -1.439292E-01"
## [1] "Llh: -1.03211119212325E+03; Pars: 4.809935E-01, 3.594419E-01, 2.494613E-01
, 1.900185E+00, -1.519388E-01"
## [1] "Llh: -1.03209934210239E+03; Pars: 4.751326E-01, 3.682849E-01, 2.600995E-01
, 1.889752E+00, -1.673423E-01"
## [1] "Llh: -1.03210264704945E+03; Pars: 4.310309E-01, 3.659094E-01, 2.642546E-01
, 1.922454E+00, -1.618462E-01"
## [1] "Llh: -1.03210626626005E+03; Pars: 4.541180E-01, 3.606107E-01, 2.548751E-01
, 1.915890E+00, -1.531992E-01"
## [1] "Llh: -1.03210375081170E+03; Pars: 4.645957E-01, 3.769464E-01, 2.693969E-01
, 1.907069E+00, -1.691499E-01"
## [1] "Llh: -1.03210071493989E+03; Pars: 4.667016E-01, 3.683184E-01, 2.604934E-01

```

```

, 1.908978E+00, -1.598433E-01"
## [1] "Llh: -1.03209765047057E+03; Pars: 4.572678E-01, 3.777249E-01, 2.722126E-01
, 1.903965E+00, -1.635100E-01"
## [1] "Llh: -1.03213681124902E+03; Pars: 4.476775E-01, 3.924155E-01, 2.886172E-01
, 1.898323E+00, -1.733005E-01"
## [1] "Llh: -1.03203765582858E+03; Pars: 4.365460E-01, 3.813978E-01, 2.665924E-01
, 1.911000E+00, -1.635922E-01"
## [1] "Llh: -1.03199943855055E+03; Pars: 4.119342E-01, 3.951997E-01, 2.734926E-01
, 1.912989E+00, -1.706557E-01"
## [1] "Llh: -1.03210776010798E+03; Pars: 4.211710E-01, 3.900916E-01, 2.908205E-01
, 1.895183E+00, -1.991779E-01"
## [1] "Llh: -1.03207472070079E+03; Pars: 4.347922E-01, 3.824376E-01, 2.784655E-01
, 1.901380E+00, -1.819087E-01"
## [1] "Llh: -1.03206520761176E+03; Pars: 4.673004E-01, 3.910303E-01, 2.736509E-01
, 1.884528E+00, -1.754578E-01"
## [1] "Llh: -1.03205885612033E+03; Pars: 4.582331E-01, 3.845929E-01, 2.713018E-01
, 1.893939E+00, -1.720549E-01"
## [1] "Llh: -1.03203498411486E+03; Pars: 4.282424E-01, 3.952499E-01, 2.817354E-01
, 1.891837E+00, -1.823453E-01"
## [1] "Llh: -1.03204241124348E+03; Pars: 4.378572E-01, 3.883378E-01, 2.764249E-01
, 1.896108E+00, -1.767198E-01"
## [1] "Llh: -1.03206844104440E+03; Pars: 4.010553E-01, 4.066178E-01, 2.907837E-01
, 1.911926E+00, -1.808476E-01"
## [1] "Llh: -1.03204805720639E+03; Pars: 4.195746E-01, 3.966758E-01, 2.831126E-01
, 1.906359E+00, -1.774713E-01"
## [1] "Llh: -1.03199477009570E+03; Pars: 4.038428E-01, 4.042953E-01, 2.830306E-01
, 1.898608E+00, -1.902643E-01"
## [1] "Llh: -1.03197192725436E+03; Pars: 3.771304E-01, 4.182735E-01, 2.884396E-01
, 1.895934E+00, -2.036415E-01"
## [1] "Llh: -1.03196026297223E+03; Pars: 4.032536E-01, 4.138792E-01, 2.807673E-01
, 1.899010E+00, -1.805588E-01"
## [1] "Llh: -1.03192393265240E+03; Pars: 3.874844E-01, 4.305565E-01, 2.819181E-01
, 1.897825E+00, -1.798838E-01"
## [1] "Llh: -1.03194682798117E+03; Pars: 3.515133E-01, 4.305708E-01, 2.921775E-01
, 1.908034E+00, -1.935441E-01"
## [1] "Llh: -1.03195896188752E+03; Pars: 3.781933E-01, 4.185851E-01, 2.869586E-01
, 1.904501E+00, -1.881718E-01"
## [1] "Llh: -1.03189518520844E+03; Pars: 3.629473E-01, 4.313736E-01, 2.839927E-01
, 1.896270E+00, -1.945569E-01"
## [1] "Llh: -1.03185451861090E+03; Pars: 3.346336E-01, 4.498446E-01, 2.844327E-01
, 1.891246E+00, -2.030997E-01"
## [1] "Llh: -1.03187311729299E+03; Pars: 3.168359E-01, 4.559255E-01, 2.864488E-01
, 1.910587E+00, -1.979846E-01"
## [1] "Llh: -1.03188749727733E+03; Pars: 3.446876E-01, 4.399348E-01, 2.852705E-01
, 1.905882E+00, -1.940748E-01"
## [1] "Llh: -1.03192547014322E+03; Pars: 2.951048E-01, 4.828142E-01, 2.998741E-01
, 1.888512E+00, -2.206057E-01"
## [1] "Llh: -1.03189559879059E+03; Pars: 3.243122E-01, 4.592394E-01, 2.932787E-01
, 1.894602E+00, -2.081182E-01"
## [1] "Llh: -1.03185904222499E+03; Pars: 3.087814E-01, 4.735521E-01, 2.868628E-01

```

```

, 1.904964E+00, -1.894107E-01"
## [1] "Llh: -1.03186463288224E+03; Pars: 3.258686E-01, 4.590827E-01, 2.872570E-01
, 1.902703E+00, -1.929684E-01"
## [1] "Llh: -1.03183083178033E+03; Pars: 3.173057E-01, 4.778733E-01, 2.809989E-01
, 1.891665E+00, -1.978547E-01"
## [1] "Llh: -1.03184062567825E+03; Pars: 3.002018E-01, 5.034391E-01, 2.754096E-01
, 1.883532E+00, -2.000100E-01"
## [1] "Llh: -1.03187126261020E+03; Pars: 2.532631E-01, 4.982419E-01, 2.908906E-01
, 1.899369E+00, -2.187034E-01"
## [1] "Llh: -1.03184898010834E+03; Pars: 2.868184E-01, 4.803831E-01, 2.886475E-01
, 1.898983E+00, -2.089985E-01"
## [1] "Llh: -1.03180348455451E+03; Pars: 3.014379E-01, 4.756097E-01, 2.776776E-01
, 1.904359E+00, -1.908210E-01"
## [1] "Llh: -1.03178131722899E+03; Pars: 2.900007E-01, 4.840125E-01, 2.698770E-01
, 1.909257E+00, -1.821724E-01"
## [1] "Llh: -1.03179275084345E+03; Pars: 2.981800E-01, 4.906605E-01, 2.778787E-01
, 1.887900E+00, -1.946298E-01"
## [1] "Llh: -1.03180320721860E+03; Pars: 3.028440E-01, 4.817362E-01, 2.800212E-01
, 1.893546E+00, -1.954685E-01"
## [1] "Llh: -1.03180691741471E+03; Pars: 3.019940E-01, 4.791511E-01, 2.738712E-01
, 1.886669E+00, -2.052913E-01"
## [1] "Llh: -1.03180169524917E+03; Pars: 3.036908E-01, 4.777452E-01, 2.771191E-01
, 1.891226E+00, -2.013212E-01"
## [1] "Llh: -1.03183476639420E+03; Pars: 2.637647E-01, 5.166915E-01, 2.733758E-01
, 1.900346E+00, -1.908909E-01"
## [1] "Llh: -1.03180826533233E+03; Pars: 2.814819E-01, 4.991018E-01, 2.761400E-01
, 1.898067E+00, -1.939431E-01"
## [1] "Llh: -1.03176339459854E+03; Pars: 3.094452E-01, 4.912998E-01, 2.641580E-01
, 1.892239E+00, -1.789700E-01"
## [1] "Llh: -1.03175212259169E+03; Pars: 3.207585E-01, 4.968508E-01, 2.519132E-01
, 1.888876E+00, -1.639557E-01"
## [1] "Llh: -1.03174061005431E+03; Pars: 2.803391E-01, 5.016338E-01, 2.601723E-01
, 1.898438E+00, -1.765542E-01"
## [1] "Llh: -1.03172955728693E+03; Pars: 2.618558E-01, 5.139535E-01, 2.497589E-01
, 1.901834E+00, -1.659039E-01"
## [1] "Llh: -1.03171263372962E+03; Pars: 3.083125E-01, 4.859643E-01, 2.544787E-01
, 1.893536E+00, -1.692501E-01"
## [1] "Llh: -1.03168840285792E+03; Pars: 3.217278E-01, 4.795258E-01, 2.436481E-01
, 1.891275E+00, -1.569036E-01"
## [1] "Llh: -1.03173661921402E+03; Pars: 2.933183E-01, 5.084444E-01, 2.401113E-01
, 1.900405E+00, -1.441050E-01"
## [1] "Llh: -1.03172444292242E+03; Pars: 2.959114E-01, 5.005894E-01, 2.493632E-01
, 1.898106E+00, -1.584090E-01"
## [1] "Llh: -1.03173584779963E+03; Pars: 2.979217E-01, 4.990441E-01, 2.279454E-01
, 1.907863E+00, -1.363081E-01"
## [1] "Llh: -1.03171906888434E+03; Pars: 2.979863E-01, 4.969349E-01, 2.404288E-01
, 1.902853E+00, -1.508885E-01"
## [1] "Llh: -1.03172441389949E+03; Pars: 3.092952E-01, 5.112586E-01, 2.241679E-01
, 1.883988E+00, -1.362519E-01"
## [1] "Llh: -1.03171038577094E+03; Pars: 3.044716E-01, 5.043066E-01, 2.355952E-01

```

```

, 1.890274E+00, -1.477320E-01"
## [1] "Llh: -1.03167387184802E+03; Pars: 2.720226E-01, 5.010241E-01, 2.356045E-01
, 1.904880E+00, -1.479791E-01"
## [1] "Llh: -1.03165528751462E+03; Pars: 2.476547E-01, 5.031239E-01, 2.274501E-01
, 1.912933E+00, -1.399908E-01"
## [1] "Llh: -1.03168306374225E+03; Pars: 3.252449E-01, 4.802433E-01, 2.288352E-01
, 1.896309E+00, -1.356656E-01"
## [1] "Llh: -1.03168226815210E+03; Pars: 3.093976E-01, 4.884577E-01, 2.340661E-01
, 1.897689E+00, -1.432252E-01"
## [1] "Llh: -1.03165936705170E+03; Pars: 2.965837E-01, 4.882492E-01, 2.231121E-01
, 1.899868E+00, -1.370870E-01"
## [1] "Llh: -1.03166827932940E+03; Pars: 2.964157E-01, 4.913054E-01, 2.296749E-01
, 1.899427E+00, -1.424175E-01"
## [1] "Llh: -1.03163324495278E+03; Pars: 2.939478E-01, 4.883830E-01, 2.251199E-01
, 1.893938E+00, -1.390870E-01"
## [1] "Llh: -1.03161005479598E+03; Pars: 2.919286E-01, 4.841624E-01, 2.174654E-01
, 1.889497E+00, -1.331862E-01"
## [1] "Llh: -1.03160276892263E+03; Pars: 2.824454E-01, 4.734607E-01, 2.227016E-01
, 1.906228E+00, -1.364251E-01"
## [1] "Llh: -1.03157888827799E+03; Pars: 2.714322E-01, 4.587527E-01, 2.162548E-01
, 1.914255E+00, -1.307716E-01"
## [1] "Llh: -1.03161091499677E+03; Pars: 2.450710E-01, 4.891851E-01, 2.036913E-01
, 1.914446E+00, -1.168008E-01"
## [1] "Llh: -1.03160993381061E+03; Pars: 2.642352E-01, 4.867522E-01, 2.136805E-01
, 1.908626E+00, -1.268265E-01"
## [1] "Llh: -1.03156830726237E+03; Pars: 2.393362E-01, 4.795686E-01, 2.051190E-01
, 1.912366E+00, -1.239196E-01"
## [1] "Llh: -1.03155891373233E+03; Pars: 2.043055E-01, 4.751849E-01, 1.906454E-01
, 1.919746E+00, -1.142668E-01"
## [1] "Llh: -1.03152630367693E+03; Pars: 2.152387E-01, 4.745965E-01, 2.030864E-01
, 1.918143E+00, -1.209298E-01"
## [1] "Llh: -1.03149552617840E+03; Pars: 1.745662E-01, 4.679140E-01, 1.930736E-01
, 1.927346E+00, -1.128511E-01"
## [1] "Llh: -1.03157331924313E+03; Pars: 2.349324E-01, 4.473913E-01, 1.849978E-01
, 1.910770E+00, -1.071701E-01"
## [1] "Llh: -1.03154601363943E+03; Pars: 2.381130E-01, 4.607172E-01, 1.956109E-01
, 1.911311E+00, -1.153753E-01"
## [1] "Llh: -1.03156605020140E+03; Pars: 1.691322E-01, 4.557732E-01, 1.862406E-01
, 1.943373E+00, -1.068504E-01"
## [1] "Llh: -1.03154384380652E+03; Pars: 1.998313E-01, 4.627105E-01, 1.940468E-01
, 1.929761E+00, -1.134343E-01"
## [1] "Llh: -1.03154459047057E+03; Pars: 1.710641E-01, 4.442552E-01, 1.821721E-01
, 1.932388E+00, -1.078532E-01"
## [1] "Llh: -1.03152901870216E+03; Pars: 1.943569E-01, 4.545183E-01, 1.900492E-01
, 1.926420E+00, -1.125965E-01"
## [1] "Llh: -1.03156103570896E+03; Pars: 1.330369E-01, 4.696247E-01, 1.691156E-01
, 1.931594E+00, -9.663801E-02"
## [1] "Llh: -1.03153533556162E+03; Pars: 1.676357E-01, 4.668828E-01, 1.809004E-01
, 1.927245E+00, -1.051714E-01"
## [1] "Llh: -1.03150513661895E+03; Pars: 1.854958E-01, 4.501995E-01, 1.908269E-01

```

```

, 1.929075E+00, -1.095046E-01"
## [1] "Llh: -1.03151312713688E+03; Pars: 1.901982E-01, 4.563199E-01, 1.907815E-01
, 1.926739E+00, -1.106952E-01"
## [1] "Llh: -1.03151946024474E+03; Pars: 1.306414E-01, 4.600674E-01, 1.839479E-01
, 1.944773E+00, -1.060479E-01"
## [1] "Llh: -1.03151497963429E+03; Pars: 1.575093E-01, 4.602298E-01, 1.868636E-01
, 1.936353E+00, -1.083798E-01"
## [1] "Llh: -1.03149186175934E+03; Pars: 1.519943E-01, 4.571015E-01, 1.826387E-01
, 1.928807E+00, -1.059671E-01"
## [1] "Llh: -1.03148221867146E+03; Pars: 1.280757E-01, 4.543225E-01, 1.769346E-01
, 1.928330E+00, -1.022334E-01"
## [1] "Llh: -1.03147580456517E+03; Pars: 1.683658E-01, 4.481019E-01, 1.941988E-01
, 1.931761E+00, -1.130548E-01"
## [1] "Llh: -1.03146535911905E+03; Pars: 1.687309E-01, 4.389966E-01, 2.008480E-01
, 1.934023E+00, -1.169965E-01"
## [1] "Llh: -1.03144150827896E+03; Pars: 1.313943E-01, 4.539386E-01, 1.893695E-01
, 1.935635E+00, -1.073897E-01"
## [1] "Llh: -1.03140550006433E+03; Pars: 9.991303E-02, 4.536490E-01, 1.890297E-01
, 1.940259E+00, -1.047862E-01"
## [1] "Llh: -1.03142260083876E+03; Pars: 1.452034E-01, 4.457301E-01, 1.934214E-01
, 1.927260E+00, -1.101690E-01"
## [1] "Llh: -1.03143938286528E+03; Pars: 1.482799E-01, 4.493116E-01, 1.917820E-01
, 1.929529E+00, -1.097217E-01"
## [1] "Llh: -1.03138801971843E+03; Pars: 1.010999E-01, 4.538458E-01, 1.904960E-01
, 1.933802E+00, -1.093099E-01"
## [1] "Llh: -1.03133952139795E+03; Pars: 5.890195E-02, 4.556801E-01, 1.903305E-01
, 1.936170E+00, -1.092125E-01"
## [1] "Llh: -1.03139778223402E+03; Pars: 6.576376E-02, 4.320608E-01, 1.871521E-01
, 1.939077E+00, -1.045079E-01"
## [1] "Llh: -1.03139830826632E+03; Pars: 9.296438E-02, 4.407580E-01, 1.886325E-01
, 1.936137E+00, -1.065937E-01"
## [1] "Llh: -1.03135896519094E+03; Pars: 8.732946E-02, 4.361330E-01, 2.073781E-01
, 1.942399E+00, -1.160354E-01"
## [1] "Llh: -1.03137172436982E+03; Pars: 9.751603E-02, 4.406109E-01, 1.997672E-01
, 1.938873E+00, -1.125849E-01"
## [1] "Llh: -1.03130590981441E+03; Pars: 1.411375E-02, 4.501789E-01, 1.860767E-01
, 1.940033E+00, -1.008879E-01"
## [1] "Llh: -1.03126212801626E+03; Pars: -6.319482E-02, 4.558764E-01, 1.786911E-01
, 1.943045E+00, -9.283365E-02"
## [1] "Llh: -1.03128154461351E+03; Pars: -4.571803E-02, 4.473881E-01, 1.876111E-01
, 1.953204E+00, -1.007813E-01"
## [1] "Llh: -1.03130499389568E+03; Pars: 2.012323E-03, 4.469730E-01, 1.890637E-01
, 1.946685E+00, -1.031282E-01"
## [1] "Llh: -1.03126771761663E+03; Pars: -5.868010E-02, 4.371416E-01, 1.914355E-01
, 1.945285E+00, -1.045621E-01"
## [1] "Llh: -1.03128492310801E+03; Pars: -1.903182E-02, 4.412113E-01, 1.908340E-01
, 1.944027E+00, -1.046181E-01"
## [1] "Llh: -1.03120879419850E+03; Pars: -7.430838E-02, 4.611351E-01, 1.950265E-01
, 1.948962E+00, -1.048621E-01"
## [1] "Llh: -1.03117638700905E+03; Pars: -1.443444E-01, 4.763979E-01, 1.989636E-01

```

```

, 1.953924E+00, -1.050391E-01"
## [1] "Llh: -1.03124051528172E+03; Pars: -1.885436E-01, 4.732542E-01, 1.714347E-01
, 1.950237E+00, -8.893606E-02"
## [1] "Llh: -1.03122614905351E+03; Pars: -1.195754E-01, 4.636877E-01, 1.804205E-01
, 1.948275E+00, -9.571090E-02"
## [1] "Llh: -1.03118451946297E+03; Pars: -2.315071E-01, 4.561205E-01, 1.845183E-01
, 1.961395E+00, -9.035831E-02"
## [1] "Llh: -1.03119539937486E+03; Pars: -1.589048E-01, 4.560104E-01, 1.859713E-01
, 1.955058E+00, -9.507186E-02"
## [1] "Llh: -1.03115032680586E+03; Pars: -2.012027E-01, 4.681804E-01, 1.860005E-01
, 1.947547E+00, -9.462034E-02"
## [1] "Llh: -1.03113157278026E+03; Pars: -2.789450E-01, 4.789362E-01, 1.851952E-01
, 1.944725E+00, -9.153988E-02"
## [1] "Llh: -1.03123574919484E+03; Pars: -2.763466E-01, 4.969787E-01, 1.796800E-01
, 1.955250E+00, -8.563066E-02"
## [1] "Llh: -1.03118350009008E+03; Pars: -2.219300E-01, 4.812922E-01, 1.826189E-01
, 1.952754E+00, -9.036352E-02"
## [1] "Llh: -1.03119372544245E+03; Pars: -3.353259E-01, 4.870096E-01, 1.939955E-01
, 1.961410E+00, -9.637104E-02"
## [1] "Llh: -1.03116090254519E+03; Pars: -2.672931E-01, 4.790324E-01, 1.901694E-01
, 1.956803E+00, -9.548669E-02"
## [1] "Llh: -1.03117357894254E+03; Pars: -3.380325E-01, 4.850816E-01, 1.961656E-01
, 1.959567E+00, -9.340411E-02"
## [1] "Llh: -1.03115260358522E+03; Pars: -2.834182E-01, 4.796423E-01, 1.922293E-01
, 1.956737E+00, -9.398081E-02"
## [1] "Llh: -1.03116511730646E+03; Pars: -2.468652E-01, 5.031482E-01, 1.951523E-01
, 1.944608E+00, -1.002057E-01"
## [1] "Llh: -1.03115268958146E+03; Pars: -2.430257E-01, 4.909551E-01, 1.924938E-01
, 1.948791E+00, -9.774385E-02"
## [1] "Llh: -1.03112086933800E+03; Pars: -2.648806E-01, 4.806399E-01, 2.010017E-01
, 1.951626E+00, -1.031526E-01"
## [1] "Llh: -1.03110938674579E+03; Pars: -2.863560E-01, 4.803141E-01, 2.101931E-01
, 1.951063E+00, -1.095472E-01"
## [1] "Llh: -1.03116983650102E+03; Pars: -3.992708E-01, 4.871706E-01, 1.891487E-01
, 1.949316E+00, -9.028023E-02"
## [1] "Llh: -1.03114190263513E+03; Pars: -3.355392E-01, 4.844548E-01, 1.916024E-01
, 1.950467E+00, -9.396996E-02"
## [1] "Llh: -1.03110590877837E+03; Pars: -3.036205E-01, 4.866775E-01, 1.985161E-01
, 1.943924E+00, -9.922597E-02"
## [1] "Llh: -1.03109040295511E+03; Pars: -3.217842E-01, 4.905457E-01, 2.026895E-01
, 1.937516E+00, -1.010956E-01"
## [1] "Llh: -1.03110650792241E+03; Pars: -3.593913E-01, 4.747002E-01, 2.002700E-01
, 1.947390E+00, -9.830952E-02"
## [1] "Llh: -1.03110841832833E+03; Pars: -3.302999E-01, 4.787128E-01, 1.983260E-01
, 1.947740E+00, -9.816810E-02"
## [1] "Llh: -1.03108318883614E+03; Pars: -3.493881E-01, 4.838877E-01, 2.037507E-01
, 1.935770E+00, -1.038040E-01"
## [1] "Llh: -1.03108027528041E+03; Pars: -3.823730E-01, 4.860245E-01, 2.095114E-01
, 1.925371E+00, -1.087157E-01"
## [1] "Llh: -1.03106384035895E+03; Pars: -3.160006E-01, 4.797012E-01, 2.115413E-01

```

```

, 1.931961E+00, -1.097132E-01"
## [1] "Llh: -1.03106393643255E+03; Pars: -3.062313E-01, 4.773419E-01, 2.215107E-01
, 1.922774E+00, -1.175848E-01"
## [1] "Llh: -1.03110930693027E+03; Pars: -3.874170E-01, 4.855384E-01, 2.284869E-01
, 1.932568E+00, -1.194126E-01"
## [1] "Llh: -1.03108519027129E+03; Pars: -3.602990E-01, 4.838794E-01, 2.176640E-01
, 1.935600E+00, -1.124444E-01"
## [1] "Llh: -1.03109293979654E+03; Pars: -4.095833E-01, 4.855798E-01, 2.064774E-01
, 1.920169E+00, -1.025642E-01"
## [1] "Llh: -1.03108009807780E+03; Pars: -3.787764E-01, 4.842580E-01, 2.074063E-01
, 1.927846E+00, -1.043099E-01"
## [1] "Llh: -1.03106853757528E+03; Pars: -3.443020E-01, 4.952557E-01, 2.192550E-01
, 1.916044E+00, -1.162020E-01"
## [1] "Llh: -1.03106802001422E+03; Pars: -3.480743E-01, 4.900348E-01, 2.145088E-01
, 1.923833E+00, -1.117289E-01"
## [1] "Llh: -1.03109091185083E+03; Pars: -3.924252E-01, 4.790584E-01, 2.215632E-01
, 1.920357E+00, -1.176692E-01"
## [1] "Llh: -1.03107668005473E+03; Pars: -3.394444E-01, 4.876483E-01, 2.074079E-01
, 1.933212E+00, -1.052390E-01"
## [1] "Llh: -1.03107068564113E+03; Pars: -3.455685E-01, 4.871679E-01, 2.024863E-01
, 1.921309E+00, -1.034383E-01"
## [1] "Llh: -1.03106908566209E+03; Pars: -3.492511E-01, 4.863437E-01, 2.062807E-01
, 1.924872E+00, -1.056898E-01"
## [1] "Llh: -1.03106444500152E+03; Pars: -3.102458E-01, 4.851451E-01, 2.093466E-01
, 1.931315E+00, -1.059567E-01"
## [1] "Llh: -1.03106586520063E+03; Pars: -3.282776E-01, 4.853648E-01, 2.093878E-01
, 1.929828E+00, -1.066464E-01"
## [1] "Llh: -1.03106140085463E+03; Pars: -2.864300E-01, 4.872714E-01, 2.122278E-01
, 1.930224E+00, -1.110211E-01"
## [1] "Llh: -1.03106660278510E+03; Pars: -2.402568E-01, 4.887851E-01, 2.146385E-01
, 1.931413E+00, -1.143767E-01"
## [1] "Llh: -1.03105562980121E+03; Pars: -3.045563E-01, 4.837341E-01, 2.141541E-01
, 1.923676E+00, -1.124048E-01"
## [1] "Llh: -1.03105501427958E+03; Pars: -2.871123E-01, 4.817888E-01, 2.175272E-01
, 1.918925E+00, -1.159877E-01"
## [1] "Llh: -1.03106063023075E+03; Pars: -2.698941E-01, 4.832096E-01, 2.197799E-01
, 1.929621E+00, -1.160732E-01"
## [1] "Llh: -1.03105818721749E+03; Pars: -2.897333E-01, 4.839912E-01, 2.164051E-01
, 1.928433E+00, -1.134774E-01"
## [1] "Llh: -1.03106172064251E+03; Pars: -2.477345E-01, 4.771952E-01, 2.123104E-01
, 1.932508E+00, -1.107335E-01"
## [1] "Llh: -1.03105800125493E+03; Pars: -2.728194E-01, 4.803732E-01, 2.128600E-01
, 1.930336E+00, -1.109824E-01"
## [1] "Llh: -1.03105627241164E+03; Pars: -2.705925E-01, 4.801028E-01, 2.188780E-01
, 1.924630E+00, -1.185160E-01"
## [1] "Llh: -1.03105565065071E+03; Pars: -2.805058E-01, 4.813584E-01, 2.164951E-01
, 1.926299E+00, -1.153762E-01"
## [1] "Llh: -1.03105259540750E+03; Pars: -2.506398E-01, 4.862216E-01, 2.186648E-01
, 1.921730E+00, -1.170247E-01"
## [1] "Llh: -1.03105523187406E+03; Pars: -2.179593E-01, 4.895150E-01, 2.222266E-01

```

```

, 1.916635E+00, -1.206805E-01"
## [1] "Llh: -1.03105806507892E+03; Pars: -2.658942E-01, 4.782549E-01, 2.205531E-01
, 1.920070E+00, -1.181183E-01"
## [1] "Llh: -1.03105473203052E+03; Pars: -2.710282E-01, 4.804933E-01, 2.184718E-01
, 1.922603E+00, -1.163440E-01"
## [1] "Llh: -1.03105418621938E+03; Pars: -2.551089E-01, 4.801012E-01, 2.172024E-01
, 1.919527E+00, -1.168086E-01"
## [1] "Llh: -1.03105331420853E+03; Pars: -2.637650E-01, 4.810708E-01, 2.170031E-01
, 1.921750E+00, -1.159758E-01"
## [1] "Llh: -1.03105762254407E+03; Pars: -2.684010E-01, 4.839980E-01, 2.224048E-01
, 1.914218E+00, -1.213010E-01"
## [1] "Llh: -1.03105438327466E+03; Pars: -2.695056E-01, 4.830892E-01, 2.200186E-01
, 1.918235E+00, -1.187213E-01"
## [1] "Llh: -1.03105430799820E+03; Pars: -2.563145E-01, 4.837013E-01, 2.201791E-01
, 1.915013E+00, -1.182452E-01"
## [1] "Llh: -1.03105333026723E+03; Pars: -2.623623E-01, 4.831145E-01, 2.192581E-01
, 1.917828E+00, -1.175280E-01"
## [1] "Llh: -1.03105415996946E+03; Pars: -2.398081E-01, 4.838006E-01, 2.198394E-01
, 1.921932E+00, -1.182498E-01"
## [1] "Llh: -1.03105322250029E+03; Pars: -2.516341E-01, 4.832969E-01, 2.192613E-01
, 1.921180E+00, -1.176843E-01"
## [1] "Llh: -1.03105181914266E+03; Pars: -2.481345E-01, 4.862354E-01, 2.192106E-01
, 1.917688E+00, -1.184297E-01"
## [1] "Llh: -1.03105187537150E+03; Pars: -2.366877E-01, 4.891321E-01, 2.195800E-01
, 1.915235E+00, -1.194725E-01"
## [1] "Llh: -1.03105232747293E+03; Pars: -2.411087E-01, 4.848799E-01, 2.173406E-01
, 1.921835E+00, -1.159356E-01"
## [1] "Llh: -1.03105208428707E+03; Pars: -2.482079E-01, 4.844316E-01, 2.180101E-01
, 1.920935E+00, -1.166321E-01"
## [1] "Llh: -1.03105367233089E+03; Pars: -2.425902E-01, 4.853828E-01, 2.176019E-01
, 1.923488E+00, -1.167706E-01"
## [1] "Llh: -1.03105248982796E+03; Pars: -2.574193E-01, 4.836806E-01, 2.188440E-01
, 1.919242E+00, -1.173386E-01"
## [1] "Llh: -1.03105282906441E+03; Pars: -2.386493E-01, 4.885010E-01, 2.205932E-01
, 1.918560E+00, -1.188679E-01"
## [1] "Llh: -1.03105228887463E+03; Pars: -2.449282E-01, 4.866327E-01, 2.196957E-01
, 1.919357E+00, -1.181449E-01"
## [1] "Llh: -1.03105114229449E+03; Pars: -2.480978E-01, 4.875906E-01, 2.185088E-01
, 1.918400E+00, -1.173437E-01"
## [1] "Llh: -1.03105065051945E+03; Pars: -2.463296E-01, 4.897517E-01, 2.181325E-01
, 1.917012E+00, -1.171734E-01"
## [1] "Llh: -1.03105172132692E+03; Pars: -2.473680E-01, 4.860621E-01, 2.188923E-01
, 1.915966E+00, -1.180628E-01"
## [1] "Llh: -1.03105150946365E+03; Pars: -2.481860E-01, 4.861020E-01, 2.188355E-01
, 1.917406E+00, -1.178033E-01"
## [1] "Llh: -1.03105157278950E+03; Pars: -2.368952E-01, 4.895926E-01, 2.187097E-01
, 1.917716E+00, -1.179347E-01"
## [1] "Llh: -1.03105137142981E+03; Pars: -2.420262E-01, 4.881078E-01, 2.187433E-01
, 1.918097E+00, -1.177857E-01"
## [1] "Llh: -1.03105062652531E+03; Pars: -2.482255E-01, 4.872120E-01, 2.174771E-01

```

```

, 1.917097E+00, -1.169847E-01"
## [1] "Llh: -1.03105032491908E+03; Pars: -2.498742E-01, 4.875018E-01, 2.163677E-01
, 1.915969E+00, -1.164047E-01"
## [1] "Llh: -1.03105097424610E+03; Pars: -2.456123E-01, 4.906641E-01, 2.185057E-01
, 1.913541E+00, -1.184066E-01"
## [1] "Llh: -1.03105078932077E+03; Pars: -2.462612E-01, 4.890985E-01, 2.183818E-01
, 1.915386E+00, -1.179630E-01"
## [1] "Llh: -1.03105004588425E+03; Pars: -2.449363E-01, 4.899933E-01, 2.169737E-01
, 1.915860E+00, -1.164223E-01"
## [1] "Llh: -1.03104980188830E+03; Pars: -2.433372E-01, 4.918831E-01, 2.158553E-01
, 1.914947E+00, -1.154187E-01"
## [1] "Llh: -1.03105021803292E+03; Pars: -2.429454E-01, 4.924511E-01, 2.161568E-01
, 1.915159E+00, -1.160949E-01"
## [1] "Llh: -1.03105013622572E+03; Pars: -2.442555E-01, 4.908561E-01, 2.168264E-01
, 1.915720E+00, -1.165220E-01"
## [1] "Llh: -1.03104985832892E+03; Pars: -2.499969E-01, 4.915300E-01, 2.154822E-01
, 1.913519E+00, -1.156070E-01"
## [1] "Llh: -1.03104987629506E+03; Pars: -2.480042E-01, 4.906723E-01, 2.162975E-01
, 1.914662E+00, -1.161517E-01"
## [1] "Llh: -1.03104961311395E+03; Pars: -2.472562E-01, 4.915085E-01, 2.146838E-01
, 1.915479E+00, -1.144874E-01"
## [1] "Llh: -1.03104987897727E+03; Pars: -2.477537E-01, 4.927179E-01, 2.128349E-01
, 1.915526E+00, -1.127495E-01"
## [1] "Llh: -1.03104992197786E+03; Pars: -2.475584E-01, 4.915565E-01, 2.135537E-01
, 1.913243E+00, -1.142025E-01"
## [1] "Llh: -1.03104970206391E+03; Pars: -2.472512E-01, 4.911046E-01, 2.146984E-01
, 1.914185E+00, -1.149452E-01"
## [1] "Llh: -1.03105045645928E+03; Pars: -2.429646E-01, 4.952816E-01, 2.146507E-01
, 1.913572E+00, -1.143874E-01"
## [1] "Llh: -1.03104985135448E+03; Pars: -2.481468E-01, 4.894353E-01, 2.159385E-01
, 1.915369E+00, -1.159004E-01"
## [1] "Llh: -1.03104963599715E+03; Pars: -2.501397E-01, 4.913271E-01, 2.138369E-01
, 1.913680E+00, -1.140214E-01"
## [1] "Llh: -1.03104959695550E+03; Pars: -2.486687E-01, 4.912093E-01, 2.145843E-01
, 1.914190E+00, -1.146466E-01"
## [1] "Llh: -1.03104964620623E+03; Pars: -2.438672E-01, 4.905253E-01, 2.148219E-01
, 1.916150E+00, -1.145522E-01"
## [1] "Llh: -1.03104960508639E+03; Pars: -2.453996E-01, 4.907763E-01, 2.149870E-01
, 1.915492E+00, -1.148159E-01"
## [1] "Llh: -1.03104978472320E+03; Pars: -2.446184E-01, 4.931643E-01, 2.139850E-01
, 1.914348E+00, -1.138251E-01"
## [1] "Llh: -1.03104964352459E+03; Pars: -2.455005E-01, 4.922294E-01, 2.144734E-01
, 1.914603E+00, -1.143439E-01"
## [1] "Llh: -1.03104964372959E+03; Pars: -2.502932E-01, 4.908482E-01, 2.135155E-01
, 1.914632E+00, -1.138769E-01"
## [1] "Llh: -1.03104958313315E+03; Pars: -2.485542E-01, 4.911067E-01, 2.141004E-01
, 1.914711E+00, -1.142624E-01"
## [1] "Llh: -1.03104956090038E+03; Pars: -2.469005E-01, 4.916271E-01, 2.144331E-01
, 1.915605E+00, -1.140773E-01"
## [1] "Llh: -1.03104967425284E+03; Pars: -2.467251E-01, 4.918885E-01, 2.143005E-01

```

```

, 1.916316E+00, -1.136433E-01"
## [1] "Llh: -1.03104953514612E+03; Pars: -2.492112E-01, 4.902636E-01, 2.146421E-01
, 1.915588E+00, -1.145719E-01"
## [1] "Llh: -1.03104959884264E+03; Pars: -2.510665E-01, 4.892836E-01, 2.147264E-01
, 1.916080E+00, -1.146858E-01"
## [1] "Llh: -1.03104953967380E+03; Pars: -2.482375E-01, 4.904848E-01, 2.144149E-01
, 1.914755E+00, -1.144623E-01"
## [1] "Llh: -1.03104952680351E+03; Pars: -2.479922E-01, 4.907405E-01, 2.144821E-01
, 1.914936E+00, -1.144685E-01"
## [1] "Llh: -1.03104954387986E+03; Pars: -2.511311E-01, 4.912022E-01, 2.139098E-01
, 1.914520E+00, -1.139947E-01"
## [1] "Llh: -1.03104952248099E+03; Pars: -2.496982E-01, 4.910957E-01, 2.141791E-01
, 1.914763E+00, -1.142000E-01"
## [1] "Llh: -1.03104953456481E+03; Pars: -2.482738E-01, 4.907239E-01, 2.141505E-01
, 1.916052E+00, -1.139854E-01"
## [1] "Llh: -1.03104951342252E+03; Pars: -2.483725E-01, 4.908452E-01, 2.142589E-01
, 1.915586E+00, -1.141507E-01"
## [1] "Llh: -1.03104948584300E+03; Pars: -2.483156E-01, 4.907218E-01, 2.146977E-01
, 1.915880E+00, -1.143250E-01"
## [1] "Llh: -1.03104952383057E+03; Pars: -2.481963E-01, 4.905294E-01, 2.149964E-01
, 1.916465E+00, -1.143563E-01"
## [1] "Llh: -1.03104960276434E+03; Pars: -2.505354E-01, 4.898411E-01, 2.144709E-01
, 1.915096E+00, -1.146092E-01"
## [1] "Llh: -1.03104950961247E+03; Pars: -2.478092E-01, 4.911800E-01, 2.144426E-01
, 1.915478E+00, -1.142102E-01"
## [1] "Llh: -1.03104949518709E+03; Pars: -2.476639E-01, 4.915705E-01, 2.141821E-01
, 1.915069E+00, -1.139699E-01"
## [1] "Llh: -1.03104948961674E+03; Pars: -2.480507E-01, 4.912434E-01, 2.142971E-01
, 1.915199E+00, -1.141204E-01"
## [1] "Llh: -1.03104951297098E+03; Pars: -2.489064E-01, 4.912940E-01, 2.142680E-01
, 1.915827E+00, -1.139340E-01"
## [1] "Llh: -1.03104949471948E+03; Pars: -2.486778E-01, 4.911556E-01, 2.143216E-01
, 1.915604E+00, -1.140677E-01"
## [1] "Llh: -1.03104957759242E+03; Pars: -2.467921E-01, 4.909626E-01, 2.146280E-01
, 1.916336E+00, -1.141496E-01"
## [1] "Llh: -1.03104949392785E+03; Pars: -2.489717E-01, 4.910624E-01, 2.142913E-01
, 1.915156E+00, -1.141874E-01"
## [1] "Llh: -1.03104947029399E+03; Pars: -2.483575E-01, 4.913001E-01, 2.145612E-01
, 1.915341E+00, -1.142136E-01"
## [1] "Llh: -1.03104946035221E+03; Pars: -2.483500E-01, 4.915278E-01, 2.147123E-01
, 1.915218E+00, -1.142450E-01"
## [1] "Llh: -1.03104944560994E+03; Pars: -2.491371E-01, 4.911043E-01, 2.144855E-01
, 1.915345E+00, -1.141679E-01"
## [1] "Llh: -1.03104941890761E+03; Pars: -2.498011E-01, 4.910664E-01, 2.145069E-01
, 1.915278E+00, -1.141468E-01"
## [1] "Llh: -1.03104944036241E+03; Pars: -2.487178E-01, 4.910931E-01, 2.146806E-01
, 1.915089E+00, -1.143422E-01"
## [1] "Llh: -1.03104944878469E+03; Pars: -2.487078E-01, 4.911087E-01, 2.145908E-01
, 1.915218E+00, -1.142736E-01"
## [1] "Llh: -1.03104943369017E+03; Pars: -2.483224E-01, 4.911984E-01, 2.148665E-01

```

```

, 1.915510E+00, -1.142843E-01"
## [1] "Llh: -1.03104943909533E+03; Pars: -2.484847E-01, 4.911644E-01, 2.147227E-01
, 1.915421E+00, -1.142601E-01"
## [1] "Llh: -1.03104942312914E+03; Pars: -2.493520E-01, 4.909994E-01, 2.150885E-01
, 1.915591E+00, -1.144169E-01"
## [1] "Llh: -1.03104942768599E+03; Pars: -2.490267E-01, 4.910604E-01, 2.148907E-01
, 1.915493E+00, -1.143428E-01"
## [1] "Llh: -1.03104940005242E+03; Pars: -2.495017E-01, 4.916326E-01, 2.148442E-01
, 1.914794E+00, -1.142491E-01"
## [1] "Llh: -1.03104940316367E+03; Pars: -2.500948E-01, 4.920887E-01, 2.149175E-01
, 1.914252E+00, -1.142112E-01"
## [1] "Llh: -1.03104938288449E+03; Pars: -2.499280E-01, 4.908683E-01, 2.148824E-01
, 1.915287E+00, -1.143307E-01"
## [1] "Llh: -1.03104936629743E+03; Pars: -2.507171E-01, 4.905390E-01, 2.149674E-01
, 1.915321E+00, -1.143736E-01"
## [1] "Llh: -1.03104936973569E+03; Pars: -2.503599E-01, 4.910811E-01, 2.150289E-01
, 1.915509E+00, -1.142461E-01"
## [1] "Llh: -1.03104938060956E+03; Pars: -2.499494E-01, 4.910841E-01, 2.149418E-01
, 1.915404E+00, -1.142701E-01"
## [1] "Llh: -1.03104936005679E+03; Pars: -2.515703E-01, 4.909288E-01, 2.149079E-01
, 1.915088E+00, -1.142887E-01"
## [1] "Llh: -1.03104936214713E+03; Pars: -2.531943E-01, 4.907940E-01, 2.149285E-01
, 1.914877E+00, -1.142908E-01"
## [1] "Llh: -1.03104935462907E+03; Pars: -2.514280E-01, 4.910995E-01, 2.146136E-01
, 1.914805E+00, -1.141048E-01"
## [1] "Llh: -1.03104937121252E+03; Pars: -2.524660E-01, 4.911495E-01, 2.143761E-01
, 1.914413E+00, -1.139487E-01"
## [1] "Llh: -1.03104933260641E+03; Pars: -2.516297E-01, 4.910457E-01, 2.152379E-01
, 1.914929E+00, -1.143581E-01"
## [1] "Llh: -1.03104933962343E+03; Pars: -2.525441E-01, 4.910353E-01, 2.156033E-01
, 1.914754E+00, -1.144638E-01"
## [1] "Llh: -1.03104933786075E+03; Pars: -2.527803E-01, 4.902458E-01, 2.150580E-01
, 1.915467E+00, -1.142994E-01"
## [1] "Llh: -1.03104933657564E+03; Pars: -2.519607E-01, 4.905922E-01, 2.150046E-01
, 1.915299E+00, -1.142868E-01"
## [1] "Llh: -1.03104937679468E+03; Pars: -2.525624E-01, 4.906010E-01, 2.148637E-01
, 1.914668E+00, -1.143187E-01"
## [1] "Llh: -1.03104934942916E+03; Pars: -2.509105E-01, 4.909610E-01, 2.149876E-01
, 1.915299E+00, -1.142643E-01"
## [1] "Llh: -1.03104932943524E+03; Pars: -2.522826E-01, 4.913121E-01, 2.149331E-01
, 1.914846E+00, -1.141475E-01"
## [1] "Llh: -1.03104933318930E+03; Pars: -2.530654E-01, 4.916991E-01, 2.149160E-01
, 1.914609E+00, -1.140344E-01"
## [1] "Llh: -1.03104930867779E+03; Pars: -2.517143E-01, 4.910753E-01, 2.150028E-01
, 1.914983E+00, -1.141759E-01"
## [1] "Llh: -1.03104928620554E+03; Pars: -2.517863E-01, 4.911485E-01, 2.150503E-01
, 1.914931E+00, -1.141196E-01"
## [1] "Llh: -1.03104933184164E+03; Pars: -2.519999E-01, 4.909242E-01, 2.154718E-01
, 1.915316E+00, -1.143657E-01"
## [1] "Llh: -1.03104932189163E+03; Pars: -2.518569E-01, 4.909680E-01, 2.152572E-01

```

```

, 1.915188E+00, -1.143005E-01"
## [1] "Llh: -1.03104930201370E+03; Pars: -2.528960E-01, 4.910655E-01, 2.152057E-01
, 1.914778E+00, -1.142207E-01"
## [1] "Llh: -1.03104930761685E+03; Pars: -2.523996E-01, 4.910394E-01, 2.151512E-01
, 1.914908E+00, -1.142316E-01"
## [1] "Llh: -1.03104931121732E+03; Pars: -2.522199E-01, 4.916243E-01, 2.152691E-01
, 1.914571E+00, -1.141717E-01"
## [1] "Llh: -1.03104930803468E+03; Pars: -2.521551E-01, 4.913660E-01, 2.152030E-01
, 1.914753E+00, -1.142005E-01"
## [1] "Llh: -1.03104928368747E+03; Pars: -2.527610E-01, 4.912984E-01, 2.150219E-01
, 1.914870E+00, -1.140374E-01"
## [1] "Llh: -1.03104926537624E+03; Pars: -2.533267E-01, 4.914248E-01, 2.149139E-01
, 1.914840E+00, -1.138770E-01"
## [1] "Llh: -1.03104926733933E+03; Pars: -2.525258E-01, 4.910770E-01, 2.153189E-01
, 1.914950E+00, -1.141398E-01"
## [1] "Llh: -1.03104927870582E+03; Pars: -2.524650E-01, 4.911358E-01, 2.152225E-01
, 1.914924E+00, -1.141417E-01"
## [1] "Llh: -1.03104925815230E+03; Pars: -2.532190E-01, 4.914648E-01, 2.150195E-01
, 1.914513E+00, -1.139226E-01"
## [1] "Llh: -1.03104924945611E+03; Pars: -2.539000E-01, 4.917134E-01, 2.149006E-01
, 1.914175E+00, -1.137336E-01"
## [1] "Llh: -1.03104922877071E+03; Pars: -2.536187E-01, 4.912055E-01, 2.149528E-01
, 1.914717E+00, -1.138358E-01"
## [1] "Llh: -1.03104919677343E+03; Pars: -2.543505E-01, 4.911253E-01, 2.148277E-01
, 1.914699E+00, -1.136535E-01"
## [1] "Llh: -1.03104919751406E+03; Pars: -2.534597E-01, 4.915301E-01, 2.147989E-01
, 1.914660E+00, -1.135887E-01"
## [1] "Llh: -1.03104921936299E+03; Pars: -2.533188E-01, 4.914139E-01, 2.149006E-01
, 1.914689E+00, -1.137467E-01"
## [1] "Llh: -1.03104919673309E+03; Pars: -2.552388E-01, 4.915997E-01, 2.148537E-01
, 1.914399E+00, -1.134775E-01"
## [1] "Llh: -1.03104919337926E+03; Pars: -2.569651E-01, 4.918255E-01, 2.147554E-01
, 1.914133E+00, -1.131564E-01"
## [1] "Llh: -1.03104921555445E+03; Pars: -2.562751E-01, 4.919709E-01, 2.143596E-01
, 1.914053E+00, -1.130638E-01"
## [1] "Llh: -1.03104920422703E+03; Pars: -2.553377E-01, 4.917473E-01, 2.145995E-01
, 1.914277E+00, -1.133328E-01"
## [1] "Llh: -1.03104917535177E+03; Pars: -2.562786E-01, 4.917518E-01, 2.146389E-01
, 1.913937E+00, -1.131090E-01"
## [1] "Llh: -1.03104919423005E+03; Pars: -2.577545E-01, 4.919153E-01, 2.145014E-01
, 1.913486E+00, -1.127250E-01"
## [1] "Llh: -1.03104912955469E+03; Pars: -2.566567E-01, 4.914785E-01, 2.145475E-01
, 1.914508E+00, -1.130025E-01"
## [1] "Llh: -1.03104909228417E+03; Pars: -2.580350E-01, 4.913611E-01, 2.143709E-01
, 1.914674E+00, -1.126370E-01"
## [1] "Llh: -1.03104911650500E+03; Pars: -2.562979E-01, 4.912902E-01, 2.147572E-01
, 1.914564E+00, -1.131250E-01"
## [1] "Llh: -1.03104913467495E+03; Pars: -2.560578E-01, 4.914044E-01, 2.147178E-01
, 1.914492E+00, -1.131770E-01"
## [1] "Llh: -1.03104915447922E+03; Pars: -2.593111E-01, 4.914113E-01, 2.145412E-01

```

```

, 1.914143E+00, -1.126837E-01"
## [1] "Llh: -1.03104914103439E+03; Pars: -2.578483E-01, 4.914410E-01, 2.146056E-01
, 1.914272E+00, -1.129099E-01"
## [1] "Llh: -1.03104916087291E+03; Pars: -2.598194E-01, 4.919427E-01, 2.144235E-01
, 1.913933E+00, -1.123215E-01"
## [1] "Llh: -1.03104913923533E+03; Pars: -2.584522E-01, 4.917383E-01, 2.145246E-01
, 1.914124E+00, -1.126545E-01"
## [1] "Llh: -1.03104907026807E+03; Pars: -2.577997E-01, 4.912076E-01, 2.144035E-01
, 1.914496E+00, -1.126178E-01"
## [1] "Llh: -1.03104902501743E+03; Pars: -2.582169E-01, 4.908989E-01, 2.142276E-01
, 1.914678E+00, -1.123484E-01"
## [1] "Llh: -1.03104905071061E+03; Pars: -2.592615E-01, 4.909402E-01, 2.143555E-01
, 1.914988E+00, -1.123609E-01"
## [1] "Llh: -1.03104906880629E+03; Pars: -2.585158E-01, 4.911429E-01, 2.144263E-01
, 1.914725E+00, -1.125479E-01"
## [1] "Llh: -1.03104902434370E+03; Pars: -2.582571E-01, 4.910503E-01, 2.142887E-01
, 1.914939E+00, -1.123404E-01"
## [1] "Llh: -1.03104898668807E+03; Pars: -2.584616E-01, 4.908551E-01, 2.141303E-01
, 1.915272E+00, -1.120556E-01"
## [1] "Llh: -1.03104900068640E+03; Pars: -2.576570E-01, 4.904008E-01, 2.142120E-01
, 1.915546E+00, -1.123563E-01"
## [1] "Llh: -1.03104901650539E+03; Pars: -2.578558E-01, 4.907348E-01, 2.142902E-01
, 1.915191E+00, -1.124309E-01"
## [1] "Llh: -1.03104898926413E+03; Pars: -2.603550E-01, 4.904924E-01, 2.137613E-01
, 1.915499E+00, -1.115783E-01"
## [1] "Llh: -1.03104899834577E+03; Pars: -2.593407E-01, 4.906917E-01, 2.140103E-01
, 1.915265E+00, -1.119650E-01"
## [1] "Llh: -1.03104895559020E+03; Pars: -2.595458E-01, 4.900746E-01, 2.139037E-01
, 1.915719E+00, -1.116428E-01"
## [1] "Llh: -1.03104895663160E+03; Pars: -2.603012E-01, 4.894326E-01, 2.136701E-01
, 1.916242E+00, -1.111458E-01"
## [1] "Llh: -1.03104893405959E+03; Pars: -2.584330E-01, 4.901486E-01, 2.137385E-01
, 1.915698E+00, -1.116317E-01"
## [1] "Llh: -1.03104891298580E+03; Pars: -2.580187E-01, 4.897534E-01, 2.134300E-01
, 1.916052E+00, -1.112671E-01"
## [1] "Llh: -1.03104897750370E+03; Pars: -2.593983E-01, 4.897320E-01, 2.135474E-01
, 1.916558E+00, -1.112116E-01"
## [1] "Llh: -1.03104895598702E+03; Pars: -2.591030E-01, 4.900235E-01, 2.137174E-01
, 1.916088E+00, -1.114958E-01"
## [1] "Llh: -1.03104893932434E+03; Pars: -2.605366E-01, 4.900785E-01, 2.133651E-01
, 1.915906E+00, -1.108596E-01"
## [1] "Llh: -1.03104893918261E+03; Pars: -2.598167E-01, 4.901591E-01, 2.135768E-01
, 1.915816E+00, -1.112337E-01"
## [1] "Llh: -1.03104890907236E+03; Pars: -2.576233E-01, 4.898538E-01, 2.137420E-01
, 1.916080E+00, -1.114997E-01"
## [1] "Llh: -1.03104889644450E+03; Pars: -2.562575E-01, 4.895349E-01, 2.137324E-01
, 1.916370E+00, -1.114604E-01"
## [1] "Llh: -1.03104895117604E+03; Pars: -2.586351E-01, 4.889647E-01, 2.132139E-01
, 1.916747E+00, -1.107843E-01"
## [1] "Llh: -1.03104892593664E+03; Pars: -2.585917E-01, 4.894366E-01, 2.134430E-01

```

```

, 1.916378E+00, -1.111022E-01"
## [1] "Llh: -1.03104888607814E+03; Pars: -2.577892E-01, 4.895599E-01, 2.135170E-01
, 1.916046E+00, -1.111867E-01"
## [1] "Llh: -1.03104886524993E+03; Pars: -2.571323E-01, 4.893283E-01, 2.134168E-01
, 1.916026E+00, -1.110321E-01"
## [1] "Llh: -1.03104888862828E+03; Pars: -2.563810E-01, 4.892105E-01, 2.131359E-01
, 1.916538E+00, -1.107953E-01"
## [1] "Llh: -1.03104888801290E+03; Pars: -2.571722E-01, 4.894264E-01, 2.133278E-01
, 1.916333E+00, -1.110072E-01"
## [1] "Llh: -1.03104890385428E+03; Pars: -2.550523E-01, 4.888336E-01, 2.133632E-01
, 1.916648E+00, -1.111138E-01"
## [1] "Llh: -1.03104889099985E+03; Pars: -2.562434E-01, 4.891646E-01, 2.134166E-01
, 1.916440E+00, -1.111438E-01"
## [1] "Llh: -1.03104885463597E+03; Pars: -2.553380E-01, 4.894463E-01, 2.134865E-01
, 1.916111E+00, -1.112621E-01"
## [1] "Llh: -1.03104883408968E+03; Pars: -2.537111E-01, 4.894511E-01, 2.135082E-01
, 1.915977E+00, -1.113420E-01"
## [1] "Llh: -1.03104885048286E+03; Pars: -2.541879E-01, 4.890090E-01, 2.135307E-01
, 1.916406E+00, -1.111272E-01"
## [1] "Llh: -1.03104885606926E+03; Pars: -2.551456E-01, 4.891950E-01, 2.135055E-01
, 1.916318E+00, -1.111621E-01"
## [1] "Llh: -1.03104884696498E+03; Pars: -2.551213E-01, 4.890170E-01, 2.131476E-01
, 1.916102E+00, -1.108005E-01"
## [1] "Llh: -1.03104884983099E+03; Pars: -2.554053E-01, 4.891464E-01, 2.132938E-01
, 1.916169E+00, -1.109655E-01"
## [1] "Llh: -1.03104881461742E+03; Pars: -2.546865E-01, 4.893280E-01, 2.133558E-01
, 1.915898E+00, -1.109798E-01"
## [1] "Llh: -1.03104878849459E+03; Pars: -2.539081E-01, 4.894097E-01, 2.133254E-01
, 1.915627E+00, -1.108978E-01"
## [1] "Llh: -1.03104880685138E+03; Pars: -2.524521E-01, 4.890597E-01, 2.134436E-01
, 1.915722E+00, -1.110726E-01"
## [1] "Llh: -1.03104881351328E+03; Pars: -2.536321E-01, 4.891513E-01, 2.134147E-01
, 1.915875E+00, -1.110562E-01"
## [1] "Llh: -1.03104880900184E+03; Pars: -2.506198E-01, 4.890503E-01, 2.133655E-01
, 1.915908E+00, -1.110639E-01"
## [1] "Llh: -1.03104880855439E+03; Pars: -2.522479E-01, 4.891198E-01, 2.133783E-01
, 1.915937E+00, -1.110560E-01"
## [1] "Llh: -1.03104880253431E+03; Pars: -2.527883E-01, 4.894139E-01, 2.131906E-01
, 1.915340E+00, -1.109404E-01"
## [1] "Llh: -1.03104880299174E+03; Pars: -2.531382E-01, 4.893126E-01, 2.132756E-01
, 1.915607E+00, -1.109871E-01"
## [1] "Llh: -1.03104878176286E+03; Pars: -2.509217E-01, 4.895648E-01, 2.135909E-01
, 1.915339E+00, -1.113230E-01"
## [1] "Llh: -1.03104878692935E+03; Pars: -2.488220E-01, 4.898389E-01, 2.138125E-01
, 1.914958E+00, -1.115843E-01"
## [1] "Llh: -1.03104878603528E+03; Pars: -2.512162E-01, 4.891760E-01, 2.132633E-01
, 1.915209E+00, -1.107738E-01"
## [1] "Llh: -1.03104878465669E+03; Pars: -2.518399E-01, 4.892447E-01, 2.133246E-01
, 1.915401E+00, -1.109159E-01"
## [1] "Llh: -1.03104878636131E+03; Pars: -2.525161E-01, 4.895574E-01, 2.133718E-01

```

```

, 1.915035E+00, -1.110039E-01"
## [1] "Llh: -1.03104878497808E+03; Pars: -2.524490E-01, 4.894480E-01, 2.133734E-01
, 1.915260E+00, -1.110169E-01"
## [1] "Llh: -1.03104877449748E+03; Pars: -2.523107E-01, 4.897730E-01, 2.132783E-01
, 1.915065E+00, -1.109650E-01"
## [1] "Llh: -1.03104877688689E+03; Pars: -2.522401E-01, 4.901301E-01, 2.131956E-01
, 1.914737E+00, -1.109112E-01"
## [1] "Llh: -1.03104876118618E+03; Pars: -2.517835E-01, 4.895622E-01, 2.135664E-01
, 1.915337E+00, -1.111070E-01"
## [1] "Llh: -1.03104875082652E+03; Pars: -2.512811E-01, 4.896363E-01, 2.137543E-01
, 1.915335E+00, -1.111904E-01"
## [1] "Llh: -1.03104877488826E+03; Pars: -2.496129E-01, 4.896570E-01, 2.136031E-01
, 1.914934E+00, -1.112667E-01"
## [1] "Llh: -1.03104876987544E+03; Pars: -2.506867E-01, 4.895952E-01, 2.135337E-01
, 1.915107E+00, -1.111745E-01"
## [1] "Llh: -1.03104875692120E+03; Pars: -2.503670E-01, 4.896776E-01, 2.136193E-01
, 1.915239E+00, -1.112106E-01"
## [1] "Llh: -1.03104876138281E+03; Pars: -2.508875E-01, 4.896202E-01, 2.135578E-01
, 1.915244E+00, -1.111622E-01"
## [1] "Llh: -1.03104875911440E+03; Pars: -2.503871E-01, 4.900543E-01, 2.137860E-01
, 1.915033E+00, -1.114295E-01"
## [1] "Llh: -1.03104875877993E+03; Pars: -2.507503E-01, 4.898518E-01, 2.136707E-01
, 1.915125E+00, -1.113011E-01"
## [1] "Llh: -1.03104874016300E+03; Pars: -2.512366E-01, 4.898488E-01, 2.135516E-01
, 1.915009E+00, -1.110136E-01"
## [1] "Llh: -1.03104872709794E+03; Pars: -2.513941E-01, 4.899909E-01, 2.135320E-01
, 1.914844E+00, -1.108589E-01"
## [1] "Llh: -1.03104874863611E+03; Pars: -2.494809E-01, 4.897276E-01, 2.139657E-01
, 1.915195E+00, -1.113292E-01"
## [1] "Llh: -1.03104874585648E+03; Pars: -2.501884E-01, 4.897390E-01, 2.137938E-01
, 1.915162E+00, -1.112381E-01"
## [1] "Llh: -1.03104873031635E+03; Pars: -2.509056E-01, 4.899631E-01, 2.138144E-01
, 1.915175E+00, -1.111452E-01"
## [1] "Llh: -1.03104873623828E+03; Pars: -2.508509E-01, 4.898711E-01, 2.137442E-01
, 1.915158E+00, -1.111525E-01"
## [1] "Llh: -1.03104872505507E+03; Pars: -2.509043E-01, 4.897509E-01, 2.137349E-01
, 1.915177E+00, -1.109562E-01"
## [1] "Llh: -1.03104871767233E+03; Pars: -2.509813E-01, 4.897005E-01, 2.137670E-01
, 1.915203E+00, -1.107837E-01"
## [1] "Llh: -1.03104871833597E+03; Pars: -2.515332E-01, 4.899343E-01, 2.138453E-01
, 1.915049E+00, -1.108759E-01"
## [1] "Llh: -1.03104872230716E+03; Pars: -2.512416E-01, 4.898701E-01, 2.137888E-01
, 1.915097E+00, -1.109596E-01"
## [1] "Llh: -1.03104870669190E+03; Pars: -2.507199E-01, 4.900948E-01, 2.137467E-01
, 1.914839E+00, -1.107704E-01"
## [1] "Llh: -1.03104870123896E+03; Pars: -2.504393E-01, 4.903243E-01, 2.137429E-01
, 1.914591E+00, -1.105604E-01"
## [1] "Llh: -1.03104870382745E+03; Pars: -2.519130E-01, 4.902263E-01, 2.136868E-01
, 1.914783E+00, -1.104515E-01"
## [1] "Llh: -1.03104870518343E+03; Pars: -2.514818E-01, 4.901044E-01, 2.137136E-01

```

```

, 1.914878E+00, -1.106482E-01"
## [1] "Llh: -1.03104871092083E+03; Pars: -2.515987E-01, 4.901072E-01, 2.136153E-01
, 1.914613E+00, -1.102670E-01"
## [1] "Llh: -1.03104870592669E+03; Pars: -2.514254E-01, 4.900712E-01, 2.136650E-01
, 1.914754E+00, -1.104865E-01"
## [1] "Llh: -1.03104871720028E+03; Pars: -2.511227E-01, 4.901116E-01, 2.139508E-01
, 1.914908E+00, -1.104043E-01"
## [1] "Llh: -1.03104870718183E+03; Pars: -2.511906E-01, 4.900814E-01, 2.138461E-01
, 1.914892E+00, -1.105180E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104870692453E+03; Pars: -2.505034E-01, 4.903736E-01, 2.135341E-01
, 1.914435E+00, -1.099282E-01"
## [1] "Llh: -1.03104871920423E+03; Pars: -2.513447E-01, 4.906721E-01, 2.136645E-01
, 1.914260E+00, -1.101205E-01"
## [1] "Llh: -1.03104870554007E+03; Pars: -2.510721E-01, 4.899432E-01, 2.137414E-01
, 1.914968E+00, -1.106179E-01"
## [1] "Llh: -1.03104869400874E+03; Pars: -2.488466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869250311E+03; Pars: -2.498466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104872466124E+03; Pars: -2.498466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104887242760E+03; Pars: -2.498466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104877379982E+03; Pars: -2.498466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104886141900E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104902468901E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104878055223E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104875221350E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104871950521E+03; Pars: -2.528466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104870376378E+03; Pars: -2.518466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104873890710E+03; Pars: -2.518466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104888717058E+03; Pars: -2.518466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104878457358E+03; Pars: -2.518466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104885504735E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01

```

```

, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104905655684E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104879285205E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104876541758E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104869250311E+03; Pars: -2.498466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104870376378E+03; Pars: -2.518466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104872002371E+03; Pars: -2.508466E-01, 4.912086E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104887383626E+03; Pars: -2.508466E-01, 4.907176E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104877488813E+03; Pars: -2.508466E-01, 4.907176E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104892429897E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104896445682E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104878231549E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104875300907E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104872466124E+03; Pars: -2.498466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104873890710E+03; Pars: -2.518466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104878741290E+03; Pars: -2.508466E-01, 4.892477E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104890924292E+03; Pars: -2.508466E-01, 4.897372E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104880696570E+03; Pars: -2.508466E-01, 4.897372E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104881555667E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104914036097E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104881456774E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104878810442E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104887242760E+03; Pars: -2.498466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104888717058E+03; Pars: -2.518466E-01, 4.902271E-01, 2.146378E-01

```

```

, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104887383626E+03; Pars: -2.508466E-01, 4.907176E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104890924292E+03; Pars: -2.508466E-01, 4.897372E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104931246544E+03; Pars: -2.508466E-01, 4.902271E-01, 2.156378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104905298934E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104919897146E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104910617549E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104879250707E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104877379982E+03; Pars: -2.498466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104878457358E+03; Pars: -2.518466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104877488813E+03; Pars: -2.508466E-01, 4.907176E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104880696570E+03; Pars: -2.508466E-01, 4.897372E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104911124372E+03; Pars: -2.508466E-01, 4.902271E-01, 2.116378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104891569454E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104913515463E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104871977300E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104897767756E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104886141900E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104885504735E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104892429897E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104881555667E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104905298934E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104891569454E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104950880987E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01

```

```

, 1.918473E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104895168374E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.092441E-01"
## [1] "Llh: -1.03104890343210E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.112441E-01"
## [1] "Llh: -1.03104902468901E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104905655684E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104896445682E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104914036097E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104919897146E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104913515463E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104987438054E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.910814E+00, -1.102441E-01"
## [1] "Llh: -1.03104911408579E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.092441E-01"
## [1] "Llh: -1.03104910667293E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.112441E-01"
## [1] "Llh: -1.03104878055223E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104879285205E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104878231549E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104881456774E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104910617549E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104871977300E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104895168374E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.092441E-01"
## [1] "Llh: -1.03104911408579E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.092441E-01"
## [1] "Llh: -1.03104901282092E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.082441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104875221350E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104876541758E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01

```

```

, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104875300907E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104878810442E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104879250707E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104897767756E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104890343210E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.112441E-01"
## [1] "Llh: -1.03104910667293E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.112441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104895701569E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.122441E-01"

```

```

## [1] "Llh: -1.06810785299651E+03; Pars: 5.000000E-01, 1.733995E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.06815594184238E+03; Pars: 5.358867E-01, 1.733995E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.06947302405545E+03; Pars: 5.000000E-01, 2.427142E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.05476844744736E+03; Pars: 5.000000E-01, 1.733995E-01, 1.415787E+00
, 0.000000E+00"
## [1] "Llh: -1.07041433746216E+03; Pars: 5.000000E-01, 1.733995E-01, 1.320976E+00
, 6.931472E-02"
## [1] "Llh: -1.06019413894851E+03; Pars: 5.176325E-01, 2.080569E-01, 1.367560E+00
, -6.931472E-02"
## [1] "Llh: -1.06224436453896E+03; Pars: 5.131669E-01, 1.993925E-01, 1.355762E+00
, -3.465736E-02"
## [1] "Llh: -1.05778762768332E+03; Pars: 5.266805E-01, 1.214135E-01, 1.391465E+00
, -3.465736E-02"
## [1] "Llh: -1.05981472056818E+03; Pars: 5.198798E-01, 1.517387E-01, 1.373498E+00
, -2.599302E-02"
## [1] "Llh: -1.05286345420922E+03; Pars: 4.871709E-01, 1.647352E-01, 1.428107E+00
, -5.198604E-02"
## [1] "Llh: -1.04735643927967E+03; Pars: 4.644998E-01, 1.604030E-01, 1.484888E+00
, -7.797906E-02"
## [1] "Llh: -1.04512812371620E+03; Pars: 5.032597E-01, 1.582369E-01, 1.514120E+00
, -9.097557E-02"
## [1] "Llh: -1.03957264513980E+03; Pars: 5.048975E-01, 1.506556E-01, 1.621037E+00
, -1.364634E-01"
## [1] "Llh: -1.04098185837589E+03; Pars: 4.800998E-01, 9.487892E-02, 1.592326E+00
, -5.523517E-02"
## [1] "Llh: -1.04405321472522E+03; Pars: 4.892198E-01, 1.231734E-01, 1.532889E+00
, -5.875505E-02"
## [1] "Llh: -1.03665797119769E+03; Pars: 4.505032E-01, 1.682551E-01, 1.674118E+00
, -1.001814E-01"

```

```

## [1] "Llh: -1.03445796625831E+03; Pars: 4.166518E-01, 1.916758E-01, 1.836297E+00
, -1.329435E-01"
## [1] "Llh: -1.03736070757423E+03; Pars: 4.331884E-01, 1.254072E-01, 1.873841E+00
, -2.013105E-01"
## [1] "Llh: -1.03639336602756E+03; Pars: 4.490039E-01, 1.374053E-01, 1.747025E+00
, -1.509829E-01"
## [1] "Llh: -1.03731541686615E+03; Pars: 4.584516E-01, 1.269048E-01, 1.937937E+00
, -1.598334E-01"
## [1] "Llh: -1.03572353106758E+03; Pars: 4.599562E-01, 1.352794E-01, 1.813127E+00
, -1.393698E-01"
## [1] "Llh: -1.03620540691083E+03; Pars: 4.341502E-01, 2.126291E-01, 1.928411E+00
, -2.246446E-01"
## [1] "Llh: -1.03529645946283E+03; Pars: 4.452079E-01, 1.831916E-01, 1.838263E+00
, -1.822922E-01"
## [1] "Llh: -1.03764016349338E+03; Pars: 3.876574E-01, 1.731204E-01, 2.017187E+00
, -1.663308E-01"
## [1] "Llh: -1.03565619490177E+03; Pars: 4.141302E-01, 1.675042E-01, 1.909888E+00
, -1.588640E-01"
## [1] "Llh: -1.03599335150468E+03; Pars: 4.186438E-01, 2.014202E-01, 1.957016E+00
, -1.557518E-01"
## [1] "Llh: -1.03529569667100E+03; Pars: 4.260357E-01, 1.854165E-01, 1.902263E+00
, -1.545596E-01"
## [1] "Llh: -1.03524161948257E+03; Pars: 3.933173E-01, 2.286147E-01, 1.931463E+00
, -1.749598E-01"
## [1] "Llh: -1.03503572171830E+03; Pars: 4.090123E-01, 2.052809E-01, 1.901174E+00
, -1.660623E-01"
## [1] "Llh: -1.03448429471960E+03; Pars: 4.341326E-01, 2.152782E-01, 1.829421E+00
, -1.590648E-01"
## [1] "Llh: -1.03464930386566E+03; Pars: 4.290432E-01, 2.033347E-01, 1.849214E+00
, -1.590146E-01"
## [1] "Llh: -1.03462345220581E+03; Pars: 3.987734E-01, 2.156341E-01, 1.896124E+00
, -1.240229E-01"
## [1] "Llh: -1.03460934005496E+03; Pars: 4.099070E-01, 2.075235E-01, 1.881490E+00
, -1.385902E-01"
## [1] "Llh: -1.03420585459483E+03; Pars: 4.087546E-01, 2.244627E-01, 1.822299E+00
, -1.437708E-01"
## [1] "Llh: -1.03422652316143E+03; Pars: 4.003787E-01, 2.439858E-01, 1.783587E+00
, -1.383764E-01"
## [1] "Llh: -1.03435743077484E+03; Pars: 4.256331E-01, 2.141892E-01, 1.785120E+00
, -1.211224E-01"
## [1] "Llh: -1.03428927942622E+03; Pars: 4.214156E-01, 2.119621E-01, 1.813452E+00
, -1.323573E-01"
## [1] "Llh: -1.03457721336673E+03; Pars: 4.306249E-01, 2.141659E-01, 1.770880E+00
, -1.454780E-01"
## [1] "Llh: -1.03439217886028E+03; Pars: 4.253493E-01, 2.125053E-01, 1.797908E+00
, -1.437561E-01"
## [1] "Llh: -1.03421339662706E+03; Pars: 4.024609E-01, 2.050248E-01, 1.805529E+00
, -1.173490E-01"
## [1] "Llh: -1.03425140470253E+03; Pars: 4.101554E-01, 2.075882E-01, 1.811472E+00
, -1.277780E-01"

```

```

## [1] "Llh: -1.03427457559844E+03; Pars: 4.121432E-01, 2.353016E-01, 1.783634E+00
, -1.356732E-01"
## [1] "Llh: -1.03424116927422E+03; Pars: 4.132657E-01, 2.243952E-01, 1.796657E+00
, -1.349907E-01"
## [1] "Llh: -1.03412435668118E+03; Pars: 3.979399E-01, 2.204171E-01, 1.821085E+00
, -1.204779E-01"
## [1] "Llh: -1.03408878443982E+03; Pars: 3.849049E-01, 2.243730E-01, 1.832785E+00
, -1.088388E-01"
## [1] "Llh: -1.03406167602004E+03; Pars: 3.838610E-01, 2.271657E-01, 1.815074E+00
, -1.201173E-01"
## [1] "Llh: -1.03401428674419E+03; Pars: 3.663579E-01, 2.347675E-01, 1.815886E+00
, -1.139973E-01"
## [1] "Llh: -1.03404783250909E+03; Pars: 3.685474E-01, 2.199188E-01, 1.841820E+00
, -1.069872E-01"
## [1] "Llh: -1.03405541922532E+03; Pars: 3.792515E-01, 2.210379E-01, 1.830424E+00
, -1.139881E-01"
## [1] "Llh: -1.03408388415477E+03; Pars: 3.621461E-01, 2.467361E-01, 1.851097E+00
, -1.194481E-01"
## [1] "Llh: -1.03404735422650E+03; Pars: 3.718294E-01, 2.363083E-01, 1.839598E+00
, -1.189233E-01"
## [1] "Llh: -1.03411703808410E+03; Pars: 3.400834E-01, 2.332211E-01, 1.842746E+00
, -8.060253E-02"
## [1] "Llh: -1.03404694000785E+03; Pars: 3.560859E-01, 2.310315E-01, 1.837613E+00
, -9.639460E-02"
## [1] "Llh: -1.03397646397176E+03; Pars: 3.473724E-01, 2.366401E-01, 1.834614E+00
, -1.093125E-01"
## [1] "Llh: -1.03394879009685E+03; Pars: 3.300017E-01, 2.427736E-01, 1.835529E+00
, -1.095493E-01"
## [1] "Llh: -1.03401930655536E+03; Pars: 3.432945E-01, 2.525217E-01, 1.822495E+00
, -1.124450E-01"
## [1] "Llh: -1.03399949468057E+03; Pars: 3.494407E-01, 2.443709E-01, 1.827307E+00
, -1.110806E-01"
## [1] "Llh: -1.03400545451341E+03; Pars: 3.298612E-01, 2.401635E-01, 1.818590E+00
, -9.658758E-02"
## [1] "Llh: -1.03398948571381E+03; Pars: 3.398868E-01, 2.391997E-01, 1.823819E+00
, -1.021715E-01"
## [1] "Llh: -1.03394975142870E+03; Pars: 3.365194E-01, 2.495244E-01, 1.813709E+00
, -1.220048E-01"
## [1] "Llh: -1.03395940909351E+03; Pars: 3.413078E-01, 2.449011E-01, 1.819656E+00
, -1.156022E-01"
## [1] "Llh: -1.03397278722606E+03; Pars: 3.134811E-01, 2.531668E-01, 1.834309E+00
, -1.084057E-01"
## [1] "Llh: -1.03396173697741E+03; Pars: 3.259380E-01, 2.485670E-01, 1.829686E+00
, -1.098036E-01"
## [1] "Llh: -1.03392145666952E+03; Pars: 3.174127E-01, 2.456614E-01, 1.824030E+00
, -1.106840E-01"
## [1] "Llh: -1.03389812258890E+03; Pars: 3.025170E-01, 2.463066E-01, 1.822394E+00
, -1.104857E-01"
## [1] "Llh: -1.03388342783222E+03; Pars: 3.078727E-01, 2.543861E-01, 1.826805E+00
, -1.237502E-01"

```

```

## [1] "Llh: -1.03385067131847E+03; Pars: 2.930148E-01, 2.619793E-01, 1.828299E+00
, -1.345395E-01"
## [1] "Llh: -1.03385457723752E+03; Pars: 3.044022E-01, 2.517250E-01, 1.820257E+00
, -1.284860E-01"
## [1] "Llh: -1.03387397219243E+03; Pars: 3.096489E-01, 2.509355E-01, 1.822610E+00
, -1.238154E-01"
## [1] "Llh: -1.03384671534404E+03; Pars: 2.804088E-01, 2.518679E-01, 1.839603E+00
, -1.195255E-01"
## [1] "Llh: -1.03385540848446E+03; Pars: 2.559660E-01, 2.530396E-01, 1.852689E+00
, -1.182859E-01"
## [1] "Llh: -1.03382843824053E+03; Pars: 2.635865E-01, 2.631657E-01, 1.819751E+00
, -1.369691E-01"
## [1] "Llh: -1.03385870294694E+03; Pars: 2.355736E-01, 2.733618E-01, 1.811913E+00
, -1.506790E-01"
## [1] "Llh: -1.03380014417974E+03; Pars: 2.683961E-01, 2.680624E-01, 1.831537E+00
, -1.492743E-01"
## [1] "Llh: -1.03379534370196E+03; Pars: 2.528072E-01, 2.789402E-01, 1.836126E+00
, -1.686687E-01"
## [1] "Llh: -1.03381920112815E+03; Pars: 2.430799E-01, 2.762516E-01, 1.841663E+00
, -1.513654E-01"
## [1] "Llh: -1.03381025956217E+03; Pars: 2.571424E-01, 2.701200E-01, 1.836288E+00
, -1.456455E-01"
## [1] "Llh: -1.03378775119691E+03; Pars: 2.365645E-01, 2.700676E-01, 1.837564E+00
, -1.508649E-01"
## [1] "Llh: -1.03379401895725E+03; Pars: 2.125590E-01, 2.741117E-01, 1.842214E+00
, -1.590276E-01"
## [1] "Llh: -1.03383108383578E+03; Pars: 2.270526E-01, 2.892789E-01, 1.825260E+00
, -1.815486E-01"
## [1] "Llh: -1.03380321354912E+03; Pars: 2.393551E-01, 2.799261E-01, 1.828835E+00
, -1.660428E-01"
## [1] "Llh: -1.03381792551343E+03; Pars: 2.301731E-01, 2.863612E-01, 1.849772E+00
, -1.786418E-01"
## [1] "Llh: -1.03379847508747E+03; Pars: 2.381068E-01, 2.805624E-01, 1.842220E+00
, -1.682237E-01"
## [1] "Llh: -1.03380175477187E+03; Pars: 2.270403E-01, 2.846282E-01, 1.836072E+00
, -1.812545E-01"
## [1] "Llh: -1.03379346427043E+03; Pars: 2.342182E-01, 2.810011E-01, 1.836126E+00
, -1.723522E-01"
## [1] "Llh: -1.03379190625013E+03; Pars: 2.412809E-01, 2.753595E-01, 1.847225E+00
, -1.640119E-01"
## [1] "Llh: -1.03378931010616E+03; Pars: 2.407980E-01, 2.765012E-01, 1.842611E+00
, -1.645196E-01"
## [1] "Llh: -1.03378154033067E+03; Pars: 2.439128E-01, 2.726927E-01, 1.833998E+00
, -1.599790E-01"
## [1] "Llh: -1.03377891424837E+03; Pars: 2.468687E-01, 2.687579E-01, 1.829901E+00
, -1.558567E-01"
## [1] "Llh: -1.03378114413628E+03; Pars: 2.270152E-01, 2.692237E-01, 1.836964E+00
, -1.531281E-01"
## [1] "Llh: -1.03378109212664E+03; Pars: 2.332054E-01, 2.716528E-01, 1.836754E+00
, -1.570132E-01"

```

```

## [1] "Llh: -1.03378230703524E+03; Pars: 2.445023E-01, 2.624886E-01, 1.837278E+00
, -1.417750E-01"
## [1] "Llh: -1.03378021115752E+03; Pars: 2.418897E-01, 2.671167E-01, 1.836990E+00
, -1.494193E-01"
## [1] "Llh: -1.03378824772112E+03; Pars: 2.383597E-01, 2.622963E-01, 1.828017E+00
, -1.420575E-01"
## [1] "Llh: -1.03378224082734E+03; Pars: 2.389669E-01, 2.658476E-01, 1.831655E+00
, -1.476730E-01"
## [1] "Llh: -1.03377460314884E+03; Pars: 2.438543E-01, 2.666199E-01, 1.830088E+00
, -1.541163E-01"
## [1] "Llh: -1.03377442935203E+03; Pars: 2.475830E-01, 2.648961E-01, 1.826362E+00
, -1.557419E-01"
## [1] "Llh: -1.03377384889158E+03; Pars: 2.457161E-01, 2.703642E-01, 1.833337E+00
, -1.613426E-01"
## [1] "Llh: -1.03377627080812E+03; Pars: 2.491618E-01, 2.726225E-01, 1.834179E+00
, -1.681774E-01"
## [1] "Llh: -1.03377661335366E+03; Pars: 2.584522E-01, 2.639147E-01, 1.826546E+00
, -1.541671E-01"
## [1] "Llh: -1.03377438716690E+03; Pars: 2.518952E-01, 2.658492E-01, 1.829093E+00
, -1.548786E-01"
## [1] "Llh: -1.03378547311361E+03; Pars: 2.542745E-01, 2.678170E-01, 1.822382E+00
, -1.644906E-01"
## [1] "Llh: -1.03377523888904E+03; Pars: 2.449281E-01, 2.672918E-01, 1.833327E+00
, -1.531871E-01"
## [1] "Llh: -1.03376842157460E+03; Pars: 2.481650E-01, 2.654427E-01, 1.831154E+00
, -1.567184E-01"
## [1] "Llh: -1.03376460730565E+03; Pars: 2.488157E-01, 2.637851E-01, 1.831781E+00
, -1.571493E-01"
## [1] "Llh: -1.03377230018055E+03; Pars: 2.521084E-01, 2.651555E-01, 1.826961E+00
, -1.613691E-01"
## [1] "Llh: -1.03377076752410E+03; Pars: 2.502938E-01, 2.656896E-01, 1.828551E+00
, -1.593236E-01"
## [1] "Llh: -1.03376963524313E+03; Pars: 2.507667E-01, 2.679480E-01, 1.835028E+00
, -1.606051E-01"
## [1] "Llh: -1.03376936707642E+03; Pars: 2.499669E-01, 2.671850E-01, 1.832857E+00
, -1.593893E-01"
## [1] "Llh: -1.03376662638118E+03; Pars: 2.455286E-01, 2.676628E-01, 1.834172E+00
, -1.637238E-01"
## [1] "Llh: -1.03376745463142E+03; Pars: 2.471050E-01, 2.672094E-01, 1.832901E+00
, -1.615125E-01"
## [1] "Llh: -1.03376380575634E+03; Pars: 2.516070E-01, 2.617970E-01, 1.830342E+00
, -1.584503E-01"
## [1] "Llh: -1.03376355185551E+03; Pars: 2.546052E-01, 2.575135E-01, 1.828846E+00
, -1.570042E-01"
## [1] "Llh: -1.03376034009860E+03; Pars: 2.491235E-01, 2.623836E-01, 1.835282E+00
, -1.593097E-01"
## [1] "Llh: -1.03375859651226E+03; Pars: 2.485404E-01, 2.607306E-01, 1.838657E+00
, -1.593027E-01"
## [1] "Llh: -1.03375851096562E+03; Pars: 2.487365E-01, 2.576610E-01, 1.833864E+00
, -1.592007E-01"

```

```

## [1] "Llh: -1.03376097597162E+03; Pars: 2.481236E-01, 2.528990E-01, 1.834368E+00
, -1.591064E-01"
## [1] "Llh: -1.03375791781926E+03; Pars: 2.548817E-01, 2.521823E-01, 1.832396E+00
, -1.526047E-01"
## [1] "Llh: -1.03376234095842E+03; Pars: 2.596910E-01, 2.444421E-01, 1.831508E+00
, -1.470451E-01"
## [1] "Llh: -1.03376261418051E+03; Pars: 2.545620E-01, 2.502586E-01, 1.835095E+00
, -1.569069E-01"
## [1] "Llh: -1.03375903452899E+03; Pars: 2.531131E-01, 2.536402E-01, 1.834266E+00
, -1.569675E-01"
## [1] "Llh: -1.03375688485823E+03; Pars: 2.480433E-01, 2.545936E-01, 1.840761E+00
, -1.570336E-01"
## [1] "Llh: -1.03376214801012E+03; Pars: 2.448261E-01, 2.531337E-01, 1.846748E+00
, -1.570483E-01"
## [1] "Llh: -1.03375635265410E+03; Pars: 2.469942E-01, 2.589436E-01, 1.838569E+00
, -1.571033E-01"
## [1] "Llh: -1.03375865099437E+03; Pars: 2.439905E-01, 2.615953E-01, 1.840725E+00
, -1.571713E-01"
## [1] "Llh: -1.03375695489085E+03; Pars: 2.507548E-01, 2.509596E-01, 1.834135E+00
, -1.536684E-01"
## [1] "Llh: -1.03375605186530E+03; Pars: 2.501994E-01, 2.534024E-01, 1.835264E+00
, -1.550770E-01"
## [1] "Llh: -1.03375481035943E+03; Pars: 2.512928E-01, 2.519000E-01, 1.839630E+00
, -1.517086E-01"
## [1] "Llh: -1.03375630288824E+03; Pars: 2.525808E-01, 2.490194E-01, 1.842520E+00
, -1.479626E-01"
## [1] "Llh: -1.03375882883107E+03; Pars: 2.435015E-01, 2.572374E-01, 1.844735E+00
, -1.578566E-01"
## [1] "Llh: -1.03375575074360E+03; Pars: 2.519877E-01, 2.534461E-01, 1.835473E+00
, -1.539177E-01"
## [1] "Llh: -1.03375580928832E+03; Pars: 2.521963E-01, 2.542524E-01, 1.833712E+00
, -1.518697E-01"
## [1] "Llh: -1.03375507321264E+03; Pars: 2.511516E-01, 2.543377E-01, 1.835472E+00
, -1.531607E-01"
## [1] "Llh: -1.03375774841141E+03; Pars: 2.553900E-01, 2.475995E-01, 1.834351E+00
, -1.498286E-01"
## [1] "Llh: -1.03375518344542E+03; Pars: 2.490669E-01, 2.561076E-01, 1.837514E+00
, -1.552847E-01"
## [1] "Llh: -1.03375499450719E+03; Pars: 2.515472E-01, 2.544933E-01, 1.838780E+00
, -1.519588E-01"
## [1] "Llh: -1.03375474995397E+03; Pars: 2.512096E-01, 2.542206E-01, 1.837901E+00
, -1.527384E-01"
## [1] "Llh: -1.03375467195135E+03; Pars: 2.493760E-01, 2.548368E-01, 1.839787E+00
, -1.525285E-01"
## [1] "Llh: -1.03375575658706E+03; Pars: 2.480804E-01, 2.555321E-01, 1.841947E+00
, -1.518339E-01"
## [1] "Llh: -1.03375440718937E+03; Pars: 2.524570E-01, 2.515399E-01, 1.838879E+00
, -1.497834E-01"
## [1] "Llh: -1.03375492684038E+03; Pars: 2.541692E-01, 2.492561E-01, 1.839562E+00
, -1.470328E-01"

```

```

## [1] "Llh: -1.03375606658237E+03; Pars: 2.510113E-01, 2.519109E-01, 1.842633E+00
, -1.502188E-01"
## [1] "Llh: -1.03375450643558E+03; Pars: 2.511165E-01, 2.537310E-01, 1.837259E+00
, -1.524252E-01"
## [1] "Llh: -1.03375482089363E+03; Pars: 2.507822E-01, 2.552642E-01, 1.837283E+00
, -1.520291E-01"
## [1] "Llh: -1.03375452399488E+03; Pars: 2.511651E-01, 2.527410E-01, 1.839043E+00
, -1.517887E-01"
## [1] "Llh: -1.03375418218744E+03; Pars: 2.508430E-01, 2.522038E-01, 1.839584E+00
, -1.505246E-01"
## [1] "Llh: -1.03375417724700E+03; Pars: 2.506600E-01, 2.511954E-01, 1.840426E+00
, -1.494177E-01"
## [1] "Llh: -1.03375461910921E+03; Pars: 2.533370E-01, 2.497669E-01, 1.838017E+00
, -1.491790E-01"
## [1] "Llh: -1.03375433821477E+03; Pars: 2.523409E-01, 2.510344E-01, 1.838459E+00
, -1.500164E-01"
## [1] "Llh: -1.03375398466219E+03; Pars: 2.521206E-01, 2.510094E-01, 1.838468E+00
, -1.490326E-01"
## [1] "Llh: -1.03375388247226E+03; Pars: 2.525998E-01, 2.501435E-01, 1.838181E+00
, -1.476545E-01"
## [1] "Llh: -1.03375484390692E+03; Pars: 2.529131E-01, 2.482256E-01, 1.840714E+00
, -1.460108E-01"
## [1] "Llh: -1.03375416737997E+03; Pars: 2.515644E-01, 2.523547E-01, 1.838123E+00
, -1.508216E-01"
## [1] "Llh: -1.03375368014555E+03; Pars: 2.511251E-01, 2.508241E-01, 1.838714E+00
, -1.491717E-01"
## [1] "Llh: -1.03375336906706E+03; Pars: 2.504618E-01, 2.504661E-01, 1.838632E+00
, -1.488658E-01"
## [1] "Llh: -1.03375338712520E+03; Pars: 2.503034E-01, 2.510455E-01, 1.839221E+00
, -1.483634E-01"
## [1] "Llh: -1.03375356694901E+03; Pars: 2.508112E-01, 2.510427E-01, 1.839030E+00
, -1.487767E-01"
## [1] "Llh: -1.03375364204313E+03; Pars: 2.518026E-01, 2.508095E-01, 1.836654E+00
, -1.484350E-01"
## [1] "Llh: -1.03375356499512E+03; Pars: 2.515165E-01, 2.509060E-01, 1.837596E+00
, -1.486807E-01"
## [1] "Llh: -1.03375316043782E+03; Pars: 2.508734E-01, 2.489259E-01, 1.838692E+00
, -1.459606E-01"
## [1] "Llh: -1.03375315647967E+03; Pars: 2.505286E-01, 2.472116E-01, 1.838977E+00
, -1.435302E-01"
## [1] "Llh: -1.03375264701954E+03; Pars: 2.488187E-01, 2.496711E-01, 1.839032E+00
, -1.470655E-01"
## [1] "Llh: -1.03375223260169E+03; Pars: 2.469494E-01, 2.494348E-01, 1.839458E+00
, -1.467710E-01"
## [1] "Llh: -1.03375274010471E+03; Pars: 2.476112E-01, 2.481730E-01, 1.840549E+00
, -1.450845E-01"
## [1] "Llh: -1.03375273180496E+03; Pars: 2.485818E-01, 2.488563E-01, 1.839810E+00
, -1.459836E-01"
## [1] "Llh: -1.03375250678286E+03; Pars: 2.479541E-01, 2.469389E-01, 1.839218E+00
, -1.442118E-01"

```

```

## [1] "Llh: -1.03375256521222E+03; Pars: 2.485394E-01, 2.479655E-01, 1.839219E+00
, -1.452497E-01"
## [1] "Llh: -1.03375274009107E+03; Pars: 2.465536E-01, 2.457546E-01, 1.840100E+00
, -1.413825E-01"
## [1] "Llh: -1.03375253380764E+03; Pars: 2.475249E-01, 2.469325E-01, 1.839733E+00
, -1.432533E-01"
## [1] "Llh: -1.03375205338504E+03; Pars: 2.450059E-01, 2.488697E-01, 1.840133E+00
, -1.465797E-01"
## [1] "Llh: -1.03375203143681E+03; Pars: 2.422904E-01, 2.496987E-01, 1.840711E+00
, -1.481045E-01"
## [1] "Llh: -1.03375182122184E+03; Pars: 2.437799E-01, 2.476462E-01, 1.839749E+00
, -1.451867E-01"
## [1] "Llh: -1.03375177718698E+03; Pars: 2.414138E-01, 2.470412E-01, 1.839719E+00
, -1.447883E-01"
## [1] "Llh: -1.03375194312326E+03; Pars: 2.417797E-01, 2.496243E-01, 1.839820E+00
, -1.486845E-01"
## [1] "Llh: -1.03375184218726E+03; Pars: 2.432034E-01, 2.489513E-01, 1.839798E+00
, -1.473267E-01"
## [1] "Llh: -1.03375199719916E+03; Pars: 2.390378E-01, 2.506241E-01, 1.840625E+00
, -1.492834E-01"
## [1] "Llh: -1.03375179714221E+03; Pars: 2.412364E-01, 2.497028E-01, 1.840273E+00
, -1.480155E-01"
## [1] "Llh: -1.03375230976766E+03; Pars: 2.372178E-01, 2.482622E-01, 1.840792E+00
, -1.473465E-01"
## [1] "Llh: -1.03375188222551E+03; Pars: 2.444797E-01, 2.491417E-01, 1.839792E+00
, -1.469149E-01"
## [1] "Llh: -1.03375165049042E+03; Pars: 2.428692E-01, 2.477198E-01, 1.839080E+00
, -1.454182E-01"
## [1] "Llh: -1.03375176384236E+03; Pars: 2.431592E-01, 2.467303E-01, 1.838266E+00
, -1.440751E-01"
## [1] "Llh: -1.03375179429214E+03; Pars: 2.399002E-01, 2.475659E-01, 1.839643E+00
, -1.458595E-01"
## [1] "Llh: -1.03375170615912E+03; Pars: 2.410370E-01, 2.479598E-01, 1.839681E+00
, -1.461234E-01"
## [1] "Llh: -1.03375170213068E+03; Pars: 2.400827E-01, 2.472604E-01, 1.839578E+00
, -1.448460E-01"
## [1] "Llh: -1.03375166074214E+03; Pars: 2.408591E-01, 2.476832E-01, 1.839633E+00
, -1.454662E-01"
## [1] "Llh: -1.03375204058494E+03; Pars: 2.418510E-01, 2.454991E-01, 1.838784E+00
, -1.428825E-01"
## [1] "Llh: -1.03375167807044E+03; Pars: 2.413899E-01, 2.486519E-01, 1.839901E+00
, -1.467323E-01"
## [1] "Llh: -1.03375160747346E+03; Pars: 2.416613E-01, 2.489662E-01, 1.839429E+00
, -1.470817E-01"
## [1] "Llh: -1.03375164794864E+03; Pars: 2.417851E-01, 2.499287E-01, 1.839284E+00
, -1.482284E-01"
## [1] "Llh: -1.03375157015828E+03; Pars: 2.423523E-01, 2.485507E-01, 1.839341E+00
, -1.462259E-01"
## [1] "Llh: -1.03375155374790E+03; Pars: 2.430126E-01, 2.488461E-01, 1.839171E+00
, -1.462771E-01"

```

```

## [1] "Llh: -1.03375156571822E+03; Pars: 2.428101E-01, 2.479557E-01, 1.838756E+00
, -1.453894E-01"
## [1] "Llh: -1.03375156519934E+03; Pars: 2.424543E-01, 2.481298E-01, 1.839042E+00
, -1.457251E-01"
## [1] "Llh: -1.03375164736775E+03; Pars: 2.441496E-01, 2.491477E-01, 1.838728E+00
, -1.467849E-01"
## [1] "Llh: -1.03375159057127E+03; Pars: 2.433228E-01, 2.487816E-01, 1.838954E+00
, -1.464552E-01"
## [1] "Llh: -1.03375154732329E+03; Pars: 2.423549E-01, 2.496420E-01, 1.839218E+00
, -1.473513E-01"
## [1] "Llh: -1.03375160571551E+03; Pars: 2.420981E-01, 2.506032E-01, 1.839287E+00
, -1.483178E-01"
## [1] "Llh: -1.03375157577097E+03; Pars: 2.439156E-01, 2.487336E-01, 1.838764E+00
, -1.458226E-01"
## [1] "Llh: -1.03375155133516E+03; Pars: 2.433500E-01, 2.487917E-01, 1.838930E+00
, -1.461374E-01"
## [1] "Llh: -1.03375149892817E+03; Pars: 2.422636E-01, 2.489232E-01, 1.839227E+00
, -1.462902E-01"
## [1] "Llh: -1.03375147355155E+03; Pars: 2.417357E-01, 2.489940E-01, 1.839363E+00
, -1.462077E-01"
## [1] "Llh: -1.03375155582073E+03; Pars: 2.427709E-01, 2.500072E-01, 1.839299E+00
, -1.472617E-01"
## [1] "Llh: -1.03375152631498E+03; Pars: 2.426917E-01, 2.495378E-01, 1.839235E+00
, -1.468775E-01"
## [1] "Llh: -1.03375148521370E+03; Pars: 2.420531E-01, 2.496367E-01, 1.839201E+00
, -1.470099E-01"
## [1] "Llh: -1.03375149584112E+03; Pars: 2.422926E-01, 2.494391E-01, 1.839194E+00
, -1.468267E-01"
## [1] "Llh: -1.03375152108678E+03; Pars: 2.410725E-01, 2.501136E-01, 1.839578E+00
, -1.475858E-01"
## [1] "Llh: -1.03375150139569E+03; Pars: 2.416399E-01, 2.497831E-01, 1.839416E+00
, -1.472237E-01"
## [1] "Llh: -1.03375145875247E+03; Pars: 2.417050E-01, 2.493338E-01, 1.839389E+00
, -1.463082E-01"
## [1] "Llh: -1.03375145571002E+03; Pars: 2.413808E-01, 2.491797E-01, 1.839475E+00
, -1.457866E-01"
## [1] "Llh: -1.03375144456582E+03; Pars: 2.407168E-01, 2.492590E-01, 1.839493E+00
, -1.462364E-01"
## [1] "Llh: -1.03375146535711E+03; Pars: 2.397354E-01, 2.491195E-01, 1.839622E+00
, -1.459159E-01"
## [1] "Llh: -1.03375145018805E+03; Pars: 2.413024E-01, 2.487516E-01, 1.839350E+00
, -1.453966E-01"
## [1] "Llh: -1.03375144465373E+03; Pars: 2.413867E-01, 2.490095E-01, 1.839367E+00
, -1.458534E-01"
## [1] "Llh: -1.03375149398045E+03; Pars: 2.405587E-01, 2.485844E-01, 1.839647E+00
, -1.450322E-01"
## [1] "Llh: -1.03375145639200E+03; Pars: 2.416786E-01, 2.493736E-01, 1.839313E+00
, -1.465155E-01"
## [1] "Llh: -1.03375143971044E+03; Pars: 2.408461E-01, 2.494168E-01, 1.839461E+00
, -1.459882E-01"

```

```

## [1] "Llh: -1.03375145958614E+03; Pars: 2.404024E-01, 2.496282E-01, 1.839511E+00
, -1.458784E-01"
## [1] "Llh: -1.03375146675957E+03; Pars: 2.404877E-01, 2.490589E-01, 1.839585E+00
, -1.454168E-01"
## [1] "Llh: -1.03375144407712E+03; Pars: 2.413803E-01, 2.492949E-01, 1.839381E+00
, -1.462408E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375144296223E+03; Pars: 2.404864E-01, 2.493757E-01, 1.839326E+00
, -1.466659E-01"
## [1] "Llh: -1.03375144454155E+03; Pars: 2.412662E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375150077734E+03; Pars: 2.410251E-01, 2.503104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375161218109E+03; Pars: 2.410251E-01, 2.483104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375192218527E+03; Pars: 2.410251E-01, 2.493104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375150875281E+03; Pars: 2.410251E-01, 2.493104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375146643683E+03; Pars: 2.410251E-01, 2.493104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375156526631E+03; Pars: 2.410251E-01, 2.493104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375143341364E+03; Pars: 2.403031E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375149040832E+03; Pars: 2.405435E-01, 2.503104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375161145592E+03; Pars: 2.405435E-01, 2.483104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375189719886E+03; Pars: 2.405435E-01, 2.493104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375152256704E+03; Pars: 2.405435E-01, 2.493104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375146058184E+03; Pars: 2.405435E-01, 2.493104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375156000612E+03; Pars: 2.405435E-01, 2.493104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375150077734E+03; Pars: 2.410251E-01, 2.503104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375149040832E+03; Pars: 2.405435E-01, 2.503104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375179010638E+03; Pars: 2.407842E-01, 2.513104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"

```

```

## [1] "Llh: -1.03375199261276E+03; Pars: 2.407842E-01, 2.503104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375155007438E+03; Pars: 2.407842E-01, 2.503104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375167692177E+03; Pars: 2.407842E-01, 2.503104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375146663785E+03; Pars: 2.407842E-01, 2.503104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375161218109E+03; Pars: 2.410251E-01, 2.483104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375161145592E+03; Pars: 2.405435E-01, 2.483104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375202238223E+03; Pars: 2.407842E-01, 2.473104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375206013728E+03; Pars: 2.407842E-01, 2.483104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375171514665E+03; Pars: 2.407842E-01, 2.483104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375148372543E+03; Pars: 2.407842E-01, 2.483104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375189227293E+03; Pars: 2.407842E-01, 2.483104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375192218527E+03; Pars: 2.410251E-01, 2.493104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375189719886E+03; Pars: 2.405435E-01, 2.493104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375199261276E+03; Pars: 2.407842E-01, 2.503104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375206013728E+03; Pars: 2.407842E-01, 2.483104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375293559778E+03; Pars: 2.407842E-01, 2.493104E-01, 1.843058E+00
, -1.463728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375194694942E+03; Pars: 2.407842E-01, 2.493104E-01, 1.841216E+00
, -1.453728E-01"
## [1] "Llh: -1.03375202441111E+03; Pars: 2.407842E-01, 2.493104E-01, 1.841216E+00
, -1.473728E-01"
## [1] "Llh: -1.03375150875281E+03; Pars: 2.410251E-01, 2.493104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375152256704E+03; Pars: 2.405435E-01, 2.493104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375155007438E+03; Pars: 2.407842E-01, 2.503104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375171514665E+03; Pars: 2.407842E-01, 2.483104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"

```

```

## [1] "Llh: -1.03375214865423E+03; Pars: 2.407842E-01, 2.493104E-01, 1.835701E+00
, -1.463728E-01"
## [1] "Llh: -1.03375153158930E+03; Pars: 2.407842E-01, 2.493104E-01, 1.837537E+00
, -1.453728E-01"
## [1] "Llh: -1.03375165249037E+03; Pars: 2.407842E-01, 2.493104E-01, 1.837537E+00
, -1.473728E-01"
## [1] "Llh: -1.03375146643683E+03; Pars: 2.410251E-01, 2.493104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375146058184E+03; Pars: 2.405435E-01, 2.493104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375167692177E+03; Pars: 2.407842E-01, 2.503104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375148372543E+03; Pars: 2.407842E-01, 2.483104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375194694942E+03; Pars: 2.407842E-01, 2.493104E-01, 1.841216E+00
, -1.453728E-01"
## [1] "Llh: -1.03375153158930E+03; Pars: 2.407842E-01, 2.493104E-01, 1.837537E+00
, -1.453728E-01"
## [1] "Llh: -1.03375164459995E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.443728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375156526631E+03; Pars: 2.410251E-01, 2.493104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375156000612E+03; Pars: 2.405435E-01, 2.493104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375146663785E+03; Pars: 2.407842E-01, 2.503104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375189227293E+03; Pars: 2.407842E-01, 2.483104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375202441111E+03; Pars: 2.407842E-01, 2.493104E-01, 1.841216E+00
, -1.473728E-01"
## [1] "Llh: -1.03375165249037E+03; Pars: 2.407842E-01, 2.493104E-01, 1.837537E+00
, -1.473728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375184282569E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.483728E-01"

```

```

## [1] "Llh: -1.06888497408102E+03; Pars: 5.000000E-01, 1.733995E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.06768822691142E+03; Pars: 5.358867E-01, 1.733995E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.07022077669511E+03; Pars: 5.000000E-01, 2.427142E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.05590421380019E+03; Pars: 5.000000E-01, 1.733995E-01, 1.415787E+00
, 0.000000E+00"
## [1] "Llh: -1.07130485531852E+03; Pars: 5.000000E-01, 1.733995E-01, 1.320976E+00
, 6.931472E-02"
## [1] "Llh: -1.06070126173966E+03; Pars: 5.176325E-01, 2.080569E-01, 1.367560E+00

```

```

, -6.931472E-02"
## [1] "Llh: -1.06277743848370E+03; Pars: 5.131669E-01, 1.993925E-01, 1.355762E+00
, -3.465736E-02"
## [1] "Llh: -1.05820879178717E+03; Pars: 5.266805E-01, 1.214135E-01, 1.391465E+00
, -3.465736E-02"
## [1] "Llh: -1.06027945788674E+03; Pars: 5.198798E-01, 1.517387E-01, 1.373498E+00
, -2.599302E-02"
## [1] "Llh: -1.05290576491129E+03; Pars: 5.405500E-01, 1.647352E-01, 1.428107E+00
, -5.198604E-02"
## [1] "Llh: -1.04695526108725E+03; Pars: 5.620421E-01, 1.604030E-01, 1.484888E+00
, -7.797906E-02"
## [1] "Llh: -1.04558540399790E+03; Pars: 5.165124E-01, 1.582369E-01, 1.514120E+00
, -9.097557E-02"
## [1] "Llh: -1.03939068344824E+03; Pars: 5.070896E-01, 1.506556E-01, 1.621037E+00
, -1.364634E-01"
## [1] "Llh: -1.04077937027893E+03; Pars: 5.292537E-01, 9.487892E-02, 1.592326E+00
, -5.523517E-02"
## [1] "Llh: -1.04422936602297E+03; Pars: 5.263241E-01, 1.231734E-01, 1.532889E+00
, -5.875505E-02"
## [1] "Llh: -1.03571591312373E+03; Pars: 5.214305E-01, 1.682551E-01, 1.674118E+00
, -1.001814E-01"
## [1] "Llh: -1.03172330769078E+03; Pars: 5.188251E-01, 1.916758E-01, 1.836297E+00
, -1.329435E-01"
## [1] "Llh: -1.03418957408743E+03; Pars: 5.594988E-01, 1.254072E-01, 1.873841E+00
, -2.013105E-01"
## [1] "Llh: -1.03453524785589E+03; Pars: 5.439912E-01, 1.374053E-01, 1.747025E+00
, -1.509829E-01"
## [1] "Llh: -1.03389123715462E+03; Pars: 4.966101E-01, 1.209058E-01, 2.007043E+00
, -1.849972E-01"
## [1] "Llh: -1.03304190782916E+03; Pars: 5.122169E-01, 1.307801E-01, 1.861405E+00
, -1.582427E-01"
## [1] "Llh: -1.03362883758666E+03; Pars: 5.188186E-01, 2.043804E-01, 2.023592E+00
, -2.592448E-01"
## [1] "Llh: -1.03259110144618E+03; Pars: 5.214079E-01, 1.770051E-01, 1.905900E+00
, -2.082424E-01"
## [1] "Llh: -1.03695907073970E+03; Pars: 5.490870E-01, 1.617785E-01, 2.155339E+00
, -2.139062E-01"
## [1] "Llh: -1.03344832335604E+03; Pars: 5.382723E-01, 1.589978E-01, 2.007173E+00
, -1.945455E-01"
## [1] "Llh: -1.03130976689579E+03; Pars: 4.881217E-01, 2.038222E-01, 1.929752E+00
, -1.456765E-01"
## [1] "Llh: -1.03129695773493E+03; Pars: 4.559241E-01, 2.430297E-01, 1.958330E+00
, -1.178595E-01"
## [1] "Llh: -1.03284424842067E+03; Pars: 4.669501E-01, 2.122476E-01, 1.779509E+00
, -1.140985E-01"
## [1] "Llh: -1.03184665247343E+03; Pars: 4.838418E-01, 1.989351E-01, 1.833882E+00
, -1.342103E-01"
## [1] "Llh: -1.03148896168306E+03; Pars: 4.769176E-01, 2.745428E-01, 1.904624E+00
, -1.383851E-01"
## [1] "Llh: -1.03125173625942E+03; Pars: 4.855076E-01, 2.386021E-01, 1.893726E+00

```

```

, -1.433495E-01"
## [1] "Llh: -1.03254303522741E+03; Pars: 4.520941E-01, 2.591163E-01, 1.854209E+00
, -5.593895E-02"
## [1] "Llh: -1.03158710878183E+03; Pars: 4.685070E-01, 2.385885E-01, 1.866999E+00
, -9.401481E-02"
## [1] "Llh: -1.03144743422597E+03; Pars: 4.794126E-01, 2.570130E-01, 1.944347E+00
, -1.098734E-01"
## [1] "Llh: -1.03125255054349E+03; Pars: 4.805161E-01, 2.424935E-01, 1.916122E+00
, -1.159576E-01"
## [1] "Llh: -1.03217384225974E+03; Pars: 4.302642E-01, 2.896811E-01, 1.983545E+00
, -1.026472E-01"
## [1] "Llh: -1.03130656978450E+03; Pars: 4.951076E-01, 2.161771E-01, 1.872052E+00
, -1.253694E-01"
## [1] "Llh: -1.03132257979070E+03; Pars: 4.898149E-01, 2.315627E-01, 1.953566E+00
, -1.572532E-01"
## [1] "Llh: -1.03120173559804E+03; Pars: 4.843987E-01, 2.333192E-01, 1.931555E+00
, -1.414436E-01"
## [1] "Llh: -1.03149820054176E+03; Pars: 4.584586E-01, 2.625451E-01, 1.979014E+00
, -1.339357E-01"
## [1] "Llh: -1.03120486168093E+03; Pars: 4.856794E-01, 2.277691E-01, 1.898238E+00
, -1.275110E-01"
## [1] "Llh: -1.03137385310866E+03; Pars: 5.138493E-01, 2.280622E-01, 1.862572E+00
, -1.462714E-01"
## [1] "Llh: -1.03121512631263E+03; Pars: 4.697625E-01, 2.392878E-01, 1.933939E+00
, -1.249624E-01"
## [1] "Llh: -1.03123766585664E+03; Pars: 4.820650E-01, 2.269956E-01, 1.912430E+00
, -1.526757E-01"
## [1] "Llh: -1.03120189447509E+03; Pars: 4.816773E-01, 2.308701E-01, 1.913353E+00
, -1.434962E-01"
## [1] "Llh: -1.03119370505919E+03; Pars: 4.752232E-01, 2.270210E-01, 1.945049E+00
, -1.253571E-01"
## [1] "Llh: -1.03127606848733E+03; Pars: 4.701630E-01, 2.212305E-01, 1.971229E+00
, -1.163608E-01"
## [1] "Llh: -1.03122359294616E+03; Pars: 4.939977E-01, 2.202019E-01, 1.910068E+00
, -1.439414E-01"
## [1] "Llh: -1.03118783093276E+03; Pars: 4.757075E-01, 2.345163E-01, 1.927943E+00
, -1.297072E-01"
## [1] "Llh: -1.03126994308448E+03; Pars: 4.728775E-01, 2.350942E-01, 1.961159E+00
, -1.424910E-01"
## [1] "Llh: -1.03118125688070E+03; Pars: 4.824468E-01, 2.296004E-01, 1.913776E+00
, -1.312560E-01"
## [1] "Llh: -1.03121372523482E+03; Pars: 4.771872E-01, 2.313584E-01, 1.945882E+00
, -1.203858E-01"
## [1] "Llh: -1.03118530884975E+03; Pars: 4.805508E-01, 2.309922E-01, 1.921434E+00
, -1.377186E-01"
## [1] "Llh: -1.03117437558708E+03; Pars: 4.726179E-01, 2.277458E-01, 1.922488E+00
, -1.205758E-01"
## [1] "Llh: -1.03118996364672E+03; Pars: 4.668354E-01, 2.249591E-01, 1.917970E+00
, -1.101419E-01"
## [1] "Llh: -1.03122877236910E+03; Pars: 4.804209E-01, 2.344063E-01, 1.898046E+00

```

```

, -1.342717E-01"
## [1] "Llh: -1.03117774713225E+03; Pars: 4.765173E-01, 2.288673E-01, 1.933190E+00
, -1.275857E-01"
## [1] "Llh: -1.03117137738202E+03; Pars: 4.803401E-01, 2.240865E-01, 1.917490E+00
, -1.288608E-01"
## [1] "Llh: -1.03117713930134E+03; Pars: 4.826733E-01, 2.188716E-01, 1.912284E+00
, -1.284377E-01"
## [1] "Llh: -1.03116682141432E+03; Pars: 4.753946E-01, 2.241578E-01, 1.922011E+00
, -1.164206E-01"
## [1] "Llh: -1.03117142125134E+03; Pars: 4.728373E-01, 2.207407E-01, 1.922299E+00
, -1.057717E-01"
## [1] "Llh: -1.03116679444903E+03; Pars: 4.700527E-01, 2.228283E-01, 1.933848E+00
, -1.154655E-01"
## [1] "Llh: -1.03117695249013E+03; Pars: 4.639755E-01, 2.194423E-01, 1.943963E+00
, -1.075703E-01"
## [1] "Llh: -1.03117209997341E+03; Pars: 4.726626E-01, 2.205419E-01, 1.914753E+00
, -1.130757E-01"
## [1] "Llh: -1.03116680878150E+03; Pars: 4.736234E-01, 2.226233E-01, 1.919346E+00
, -1.167032E-01"
## [1] "Llh: -1.03115829058613E+03; Pars: 4.770690E-01, 2.191022E-01, 1.923839E+00
, -1.181493E-01"
## [1] "Llh: -1.03115690244464E+03; Pars: 4.793102E-01, 2.147804E-01, 1.924514E+00
, -1.169360E-01"
## [1] "Llh: -1.03116784783240E+03; Pars: 4.688959E-01, 2.181084E-01, 1.932383E+00
, -1.039018E-01"
## [1] "Llh: -1.03116195984415E+03; Pars: 4.717311E-01, 2.196029E-01, 1.928649E+00
, -1.101416E-01"
## [1] "Llh: -1.03115630827990E+03; Pars: 4.719448E-01, 2.157596E-01, 1.931164E+00
, -1.132025E-01"
## [1] "Llh: -1.03115775269449E+03; Pars: 4.702292E-01, 2.115605E-01, 1.935757E+00
, -1.115935E-01"
## [1] "Llh: -1.03116402838567E+03; Pars: 4.728695E-01, 2.138624E-01, 1.939790E+00
, -1.111696E-01"
## [1] "Llh: -1.03115900234936E+03; Pars: 4.730579E-01, 2.160526E-01, 1.934658E+00
, -1.125530E-01"
## [1] "Llh: -1.03115460346967E+03; Pars: 4.779823E-01, 2.102694E-01, 1.925646E+00
, -1.109510E-01"
## [1] "Llh: -1.03116158555769E+03; Pars: 4.819971E-01, 2.039900E-01, 1.921559E+00
, -1.086938E-01"
## [1] "Llh: -1.03116430561459E+03; Pars: 4.794269E-01, 2.088281E-01, 1.929334E+00
, -1.166797E-01"
## [1] "Llh: -1.03115659702591E+03; Pars: 4.736434E-01, 2.169092E-01, 1.928820E+00
, -1.117761E-01"
## [1] "Llh: -1.03115631006070E+03; Pars: 4.783781E-01, 2.128067E-01, 1.920437E+00
, -1.138798E-01"
## [1] "Llh: -1.03115482339233E+03; Pars: 4.770425E-01, 2.136182E-01, 1.923982E+00
, -1.135481E-01"
## [1] "Llh: -1.03115538633396E+03; Pars: 4.710197E-01, 2.134978E-01, 1.930292E+00
, -1.078029E-01"
## [1] "Llh: -1.03115450103151E+03; Pars: 4.730788E-01, 2.138185E-01, 1.928846E+00

```

```
, -1.100862E-01"
## [1] "Llh: -1.03115551000099E+03; Pars: 4.763709E-01, 2.098236E-01, 1.925996E+00
, -1.121178E-01"
## [1] "Llh: -1.03115440330974E+03; Pars: 4.756876E-01, 2.115950E-01, 1.926702E+00
, -1.120324E-01"
## [1] "Llh: -1.03115574659277E+03; Pars: 4.799775E-01, 2.088909E-01, 1.921435E+00
, -1.101063E-01"
## [1] "Llh: -1.03115439855917E+03; Pars: 4.779566E-01, 2.106081E-01, 1.923863E+00
, -1.108804E-01"
## [1] "Llh: -1.03115397403967E+03; Pars: 4.753032E-01, 2.095273E-01, 1.928547E+00
, -1.084269E-01"
## [1] "Llh: -1.03115494813188E+03; Pars: 4.744359E-01, 2.074819E-01, 1.930834E+00
, -1.058662E-01"
## [1] "Llh: -1.03115396118566E+03; Pars: 4.730374E-01, 2.125051E-01, 1.928332E+00
, -1.097619E-01"
## [1] "Llh: -1.03115514321869E+03; Pars: 4.705841E-01, 2.136229E-01, 1.929676E+00
, -1.091673E-01"
## [1] "Llh: -1.03115577145820E+03; Pars: 4.779195E-01, 2.082993E-01, 1.924876E+00
, -1.104646E-01"
## [1] "Llh: -1.03115382486242E+03; Pars: 4.742843E-01, 2.124387E-01, 1.927853E+00
, -1.101808E-01"
## [1] "Llh: -1.03115344689206E+03; Pars: 4.745969E-01, 2.109446E-01, 1.927594E+00
, -1.075926E-01"
## [1] "Llh: -1.03115377985411E+03; Pars: 4.740525E-01, 2.106193E-01, 1.928040E+00
, -1.053726E-01"
## [1] "Llh: -1.03115537849208E+03; Pars: 4.706808E-01, 2.120997E-01, 1.932309E+00
, -1.071006E-01"
## [1] "Llh: -1.03115368859552E+03; Pars: 4.761272E-01, 2.109810E-01, 1.925971E+00
, -1.099354E-01"
## [1] "Llh: -1.03115434869432E+03; Pars: 4.737185E-01, 2.139073E-01, 1.926327E+00
, -1.103084E-01"
## [1] "Llh: -1.03115364369294E+03; Pars: 4.749065E-01, 2.106223E-01, 1.927992E+00
, -1.088973E-01"
## [1] "Llh: -1.03115364365142E+03; Pars: 4.769270E-01, 2.099882E-01, 1.926373E+00
, -1.085412E-01"
## [1] "Llh: -1.03115352675310E+03; Pars: 4.759516E-01, 2.106174E-01, 1.926863E+00
, -1.088463E-01"
## [1] "Llh: -1.03115359424937E+03; Pars: 4.765085E-01, 2.091440E-01, 1.926357E+00
, -1.074550E-01"
## [1] "Llh: -1.03115349164099E+03; Pars: 4.759515E-01, 2.099677E-01, 1.926731E+00
, -1.081365E-01"
## [1] "Llh: -1.03115359093695E+03; Pars: 4.745766E-01, 2.100950E-01, 1.928620E+00
, -1.068009E-01"
## [1] "Llh: -1.03115348802714E+03; Pars: 4.749637E-01, 2.103165E-01, 1.927957E+00
, -1.075845E-01"
## [1] "Llh: -1.03115332737873E+03; Pars: 4.758250E-01, 2.103007E-01, 1.926580E+00
, -1.071827E-01"
## [1] "Llh: -1.03115332717353E+03; Pars: 4.762850E-01, 2.101400E-01, 1.925874E+00
, -1.063254E-01"
## [1] "Llh: -1.03115341438830E+03; Pars: 4.749464E-01, 2.100669E-01, 1.927215E+00
```

```
, -1.059731E-01"
## [1] "Llh: -1.03115336146815E+03; Pars: 4.751975E-01, 2.102045E-01, 1.927127E+00
, -1.066914E-01"
## [1] "Llh: -1.03115362040944E+03; Pars: 4.745703E-01, 2.108351E-01, 1.927545E+00
, -1.059605E-01"
## [1] "Llh: -1.03115337918385E+03; Pars: 4.756058E-01, 2.101845E-01, 1.926934E+00
, -1.075925E-01"
## [1] "Llh: -1.03115333098993E+03; Pars: 4.758785E-01, 2.104203E-01, 1.925808E+00
, -1.065164E-01"
## [1] "Llh: -1.03115331823555E+03; Pars: 4.756496E-01, 2.103943E-01, 1.926345E+00
, -1.067834E-01"
## [1] "Llh: -1.03115335661609E+03; Pars: 4.767742E-01, 2.095171E-01, 1.925547E+00
, -1.061038E-01"
## [1] "Llh: -1.03115331843227E+03; Pars: 4.762290E-01, 2.098740E-01, 1.926058E+00
, -1.064760E-01"
## [1] "Llh: -1.03115341882228E+03; Pars: 4.760745E-01, 2.101219E-01, 1.925768E+00
, -1.055456E-01"
## [1] "Llh: -1.03115332817709E+03; Pars: 4.757229E-01, 2.101689E-01, 1.926643E+00
, -1.070808E-01"
## [1] "Llh: -1.03115332522192E+03; Pars: 4.767468E-01, 2.100840E-01, 1.925334E+00
, -1.066413E-01"
## [1] "Llh: -1.03115331053357E+03; Pars: 4.763590E-01, 2.101142E-01, 1.925782E+00
, -1.066539E-01"
## [1] "Llh: -1.03115335534494E+03; Pars: 4.765386E-01, 2.100924E-01, 1.925387E+00
, -1.060386E-01"
## [1] "Llh: -1.03115331243401E+03; Pars: 4.759267E-01, 2.101497E-01, 1.926329E+00
, -1.068202E-01"
## [1] "Llh: -1.03115331376606E+03; Pars: 4.757972E-01, 2.101262E-01, 1.926383E+00
, -1.070414E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115338684653E+03; Pars: 4.768719E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115345341085E+03; Pars: 4.763952E-01, 2.111296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115347189602E+03; Pars: 4.763952E-01, 2.091296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115374339330E+03; Pars: 4.763952E-01, 2.101296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115341965699E+03; Pars: 4.763952E-01, 2.101296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115340516397E+03; Pars: 4.763952E-01, 2.101296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115340479314E+03; Pars: 4.763952E-01, 2.101296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115333451464E+03; Pars: 4.749682E-01, 2.101296E-01, 1.926256E+00
```

```
, -1.068624E-01"
## [1] "Llh: -1.03115342922820E+03; Pars: 4.754434E-01, 2.111296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115344385162E+03; Pars: 4.754434E-01, 2.091296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115356593817E+03; Pars: 4.754434E-01, 2.101296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115354458018E+03; Pars: 4.754434E-01, 2.101296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115337758112E+03; Pars: 4.754434E-01, 2.101296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115338000649E+03; Pars: 4.754434E-01, 2.101296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115345341085E+03; Pars: 4.763952E-01, 2.111296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115342922820E+03; Pars: 4.754434E-01, 2.111296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115380435095E+03; Pars: 4.759191E-01, 2.121296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115377926371E+03; Pars: 4.759191E-01, 2.111296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115357102391E+03; Pars: 4.759191E-01, 2.111296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115363933324E+03; Pars: 4.759191E-01, 2.111296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115335800132E+03; Pars: 4.759191E-01, 2.111296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115347189602E+03; Pars: 4.763952E-01, 2.091296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115344385162E+03; Pars: 4.754434E-01, 2.091296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115383746477E+03; Pars: 4.759191E-01, 2.081296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115375993662E+03; Pars: 4.759191E-01, 2.091296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115362357194E+03; Pars: 4.759191E-01, 2.091296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115337352272E+03; Pars: 4.759191E-01, 2.091296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115365691482E+03; Pars: 4.759191E-01, 2.091296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115374339330E+03; Pars: 4.763952E-01, 2.101296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115356593817E+03; Pars: 4.754434E-01, 2.101296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115377926371E+03; Pars: 4.759191E-01, 2.111296E-01, 1.928183E+00
```

```
, -1.068624E-01"
## [1] "Llh: -1.03115375993662E+03; Pars: 4.759191E-01, 2.091296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115446836283E+03; Pars: 4.759191E-01, 2.101296E-01, 1.930112E+00
, -1.068624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115372160666E+03; Pars: 4.759191E-01, 2.101296E-01, 1.928183E+00
, -1.058624E-01"
## [1] "Llh: -1.03115370208300E+03; Pars: 4.759191E-01, 2.101296E-01, 1.928183E+00
, -1.078624E-01"
## [1] "Llh: -1.03115341965699E+03; Pars: 4.763952E-01, 2.101296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115354458018E+03; Pars: 4.754434E-01, 2.101296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115357102391E+03; Pars: 4.759191E-01, 2.111296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115362357194E+03; Pars: 4.759191E-01, 2.091296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115412381710E+03; Pars: 4.759191E-01, 2.101296E-01, 1.922407E+00
, -1.068624E-01"
## [1] "Llh: -1.03115352878980E+03; Pars: 4.759191E-01, 2.101296E-01, 1.924330E+00
, -1.058624E-01"
## [1] "Llh: -1.03115355047563E+03; Pars: 4.759191E-01, 2.101296E-01, 1.924330E+00
, -1.078624E-01"
## [1] "Llh: -1.03115340516397E+03; Pars: 4.763952E-01, 2.101296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115337758112E+03; Pars: 4.754434E-01, 2.101296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115363933324E+03; Pars: 4.759191E-01, 2.111296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115337352272E+03; Pars: 4.759191E-01, 2.091296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115372160666E+03; Pars: 4.759191E-01, 2.101296E-01, 1.928183E+00
, -1.058624E-01"
## [1] "Llh: -1.03115352878980E+03; Pars: 4.759191E-01, 2.101296E-01, 1.924330E+00
, -1.058624E-01"
## [1] "Llh: -1.03115358905767E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.048624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115340479314E+03; Pars: 4.763952E-01, 2.101296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115338000649E+03; Pars: 4.754434E-01, 2.101296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115335800132E+03; Pars: 4.759191E-01, 2.111296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115365691482E+03; Pars: 4.759191E-01, 2.091296E-01, 1.926256E+00
```

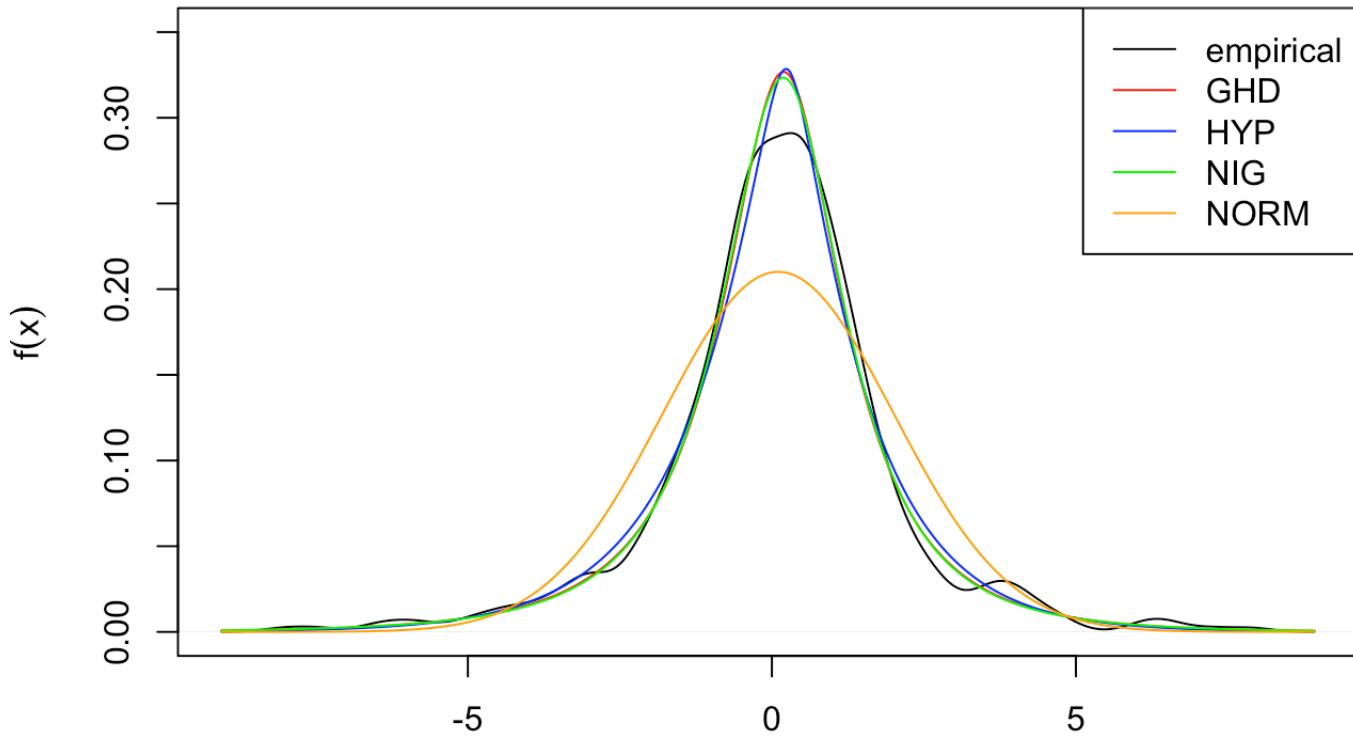
```

, -1.078624E-01"
## [1] "Llh: -1.03115370208300E+03; Pars: 4.759191E-01, 2.101296E-01, 1.928183E+00
, -1.078624E-01"
## [1] "Llh: -1.03115355047563E+03; Pars: 4.759191E-01, 2.101296E-01, 1.924330E+00
, -1.078624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115359107412E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.088624E-01"

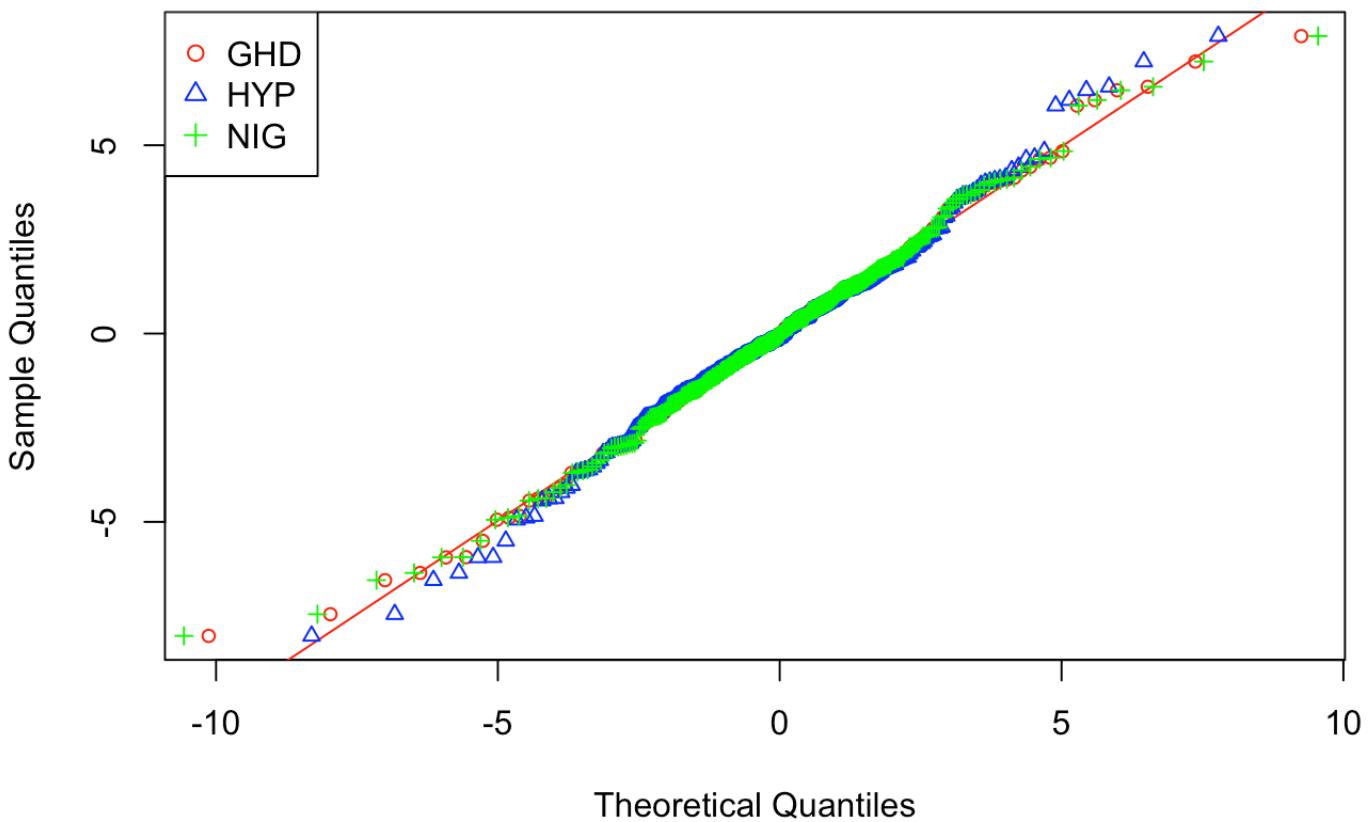
```

Obtaining the density functions and plot for AAPL

density.default(x = EWPortTimeS, na.rm = TRUE)



QQ Plot for EWPort



Best fit Model #Use the function “lik.ratio.test” to perform a likelihood-ratio test on fitted generalized hyperbolic distribution objects of class mle.ghyp. The likelihood-ratio test can be used to check whether a special case of the generalized hyperbolic distribution is the “true” underlying distribution. #statistic: the value of the L-statistic. #p.value: the p-value for the test (the p-value is less than 0.05, then there is evidence against the null hypothesis) #df: the degrees of freedom for the L-statistic #H0: a boolean stating whether the null hypothesis is TRUE or FALSE (if TRUE there is no relationship between the data sets)

```
## Currently fitting: asymmetric ghyp
## [1] "Llh: -1.06810785299651E+03; Pars: 1.000000E+00, 5.000000E-01, 1.733995E-01
, 1.320976E+00, 0.000000E+00"
## [1] "Llh: -1.06867133639430E+03; Pars: 1.100000E+00, 5.000000E-01, 1.733995E-01
, 1.320976E+00, 0.000000E+00"
## [1] "Llh: -1.06818839248668E+03; Pars: 1.000000E+00, 5.525855E-01, 1.733995E-01
, 1.320976E+00, 0.000000E+00"
## [1] "Llh: -1.07058141292037E+03; Pars: 1.000000E+00, 5.000000E-01, 2.733995E-01
, 1.320976E+00, 0.000000E+00"
## [1] "Llh: -1.05003986865477E+03; Pars: 1.000000E+00, 5.000000E-01, 1.733995E-01
, 1.459904E+00, 0.000000E+00"
## [1] "Llh: -1.07197383360933E+03; Pars: 1.000000E+00, 5.000000E-01, 1.733995E-01
, 1.320976E+00, 1.000000E-01"
## [1] "Llh: -1.05927708426710E+03; Pars: 1.040000E+00, 5.204054E-01, 2.133995E-01
, 1.374886E+00, -1.000000E-01"
## [1] "Llh: -1.06141617615431E+03; Pars: 1.030000E+00, 5.152273E-01, 2.033995E-01
```

```

, 1.361206E+00, -5.000000E-02"
## [1] "Llh: -1.05812003833053E+03; Pars: 1.056000E+00, 5.287988E-01, 8.939950E-02
, 1.397061E+00, -4.000000E-02"
## [1] "Llh: -1.05959052937030E+03; Pars: 1.042000E+00, 5.214472E-01, 1.353995E-01
, 1.377639E+00, -3.000000E-02"
## [1] "Llh: -1.05268561920268E+03; Pars: 9.384000E-01, 5.407776E-01, 1.557995E-01
, 1.428709E+00, -5.600000E-02"
## [1] "Llh: -1.05603795981565E+03; Pars: 9.788000E-01, 5.302816E-01, 1.601995E-01
, 1.400979E+00, -4.200000E-02"
## [1] "Llh: -1.04857875897249E+03; Pars: 1.013760E+00, 4.851063E-01, 1.487595E-01
, 1.474223E+00, -7.840000E-02"
## [1] "Llh: -1.04301383252053E+03; Pars: 1.020640E+00, 4.545228E-01, 1.364395E-01
, 1.557389E+00, -1.176000E-01"
## [1] "Llh: -1.04230926065047E+03; Pars: 1.022016E+00, 5.160605E-01, 1.339755E-01
, 1.574577E+00, -1.254400E-01"
## [1] "Llh: -1.03916485680695E+03; Pars: 1.033024E+00, 5.242833E-01, 1.142635E-01
, 1.719090E+00, -1.881600E-01"
## [1] "Llh: -1.03951155700864E+03; Pars: 9.792256E-01, 4.973001E-01, 5.432110E-02
, 1.654265E+00, -6.070400E-02"
## [1] "Llh: -1.04196040958699E+03; Pars: 9.944192E-01, 5.029784E-01, 9.409070E-02
, 1.579503E+00, -7.052800E-02"
## [1] "Llh: -1.03525380924625E+03; Pars: 9.325158E-01, 4.775305E-01, 1.642897E-01
, 1.741855E+00, -1.289856E-01"
## [1] "Llh: -1.03516922710319E+03; Pars: 8.707738E-01, 4.537915E-01, 2.017349E-01
, 1.944959E+00, -1.734784E-01"
## [1] "Llh: -1.03744274028587E+03; Pars: 1.023065E+00, 4.353193E-01, 1.162639E-01
, 1.926950E+00, -1.599770E-01"
## [1] "Llh: -1.03597617309508E+03; Pars: 1.001899E+00, 4.595795E-01, 1.261478E-01
, 1.788088E+00, -1.339827E-01"
## [1] "Llh: -1.04400156571277E+03; Pars: 9.622249E-01, 4.552111E-01, 7.976320E-02
, 2.045105E+00, -2.695700E-01"
## [1] "Llh: -1.03824987938038E+03; Pars: 9.716687E-01, 4.660174E-01, 1.031723E-01
, 1.879827E+00, -2.021775E-01"
## [1] "Llh: -1.04151170401934E+03; Pars: 9.219964E-01, 5.057848E-01, 1.034163E-01
, 2.066955E+00, -1.858011E-01"
## [1] "Llh: -1.03759350168514E+03; Pars: 9.466573E-01, 4.924513E-01, 1.116721E-01
, 1.925740E+00, -1.687508E-01"
## [1] "Llh: -1.04058194756045E+03; Pars: 9.503835E-01, 4.604694E-01, 2.084751E-01
, 2.067856E+00, -2.859158E-01"
## [1] "Llh: -1.03699028043397E+03; Pars: 9.720151E-01, 4.878251E-01, 9.285961E-02
, 1.749177E+00, -1.170069E-01"
## [1] "Llh: -1.03663327222985E+03; Pars: 8.721816E-01, 4.243582E-01, 1.399712E-01
, 2.003737E+00, -1.299986E-01"
## [1] "Llh: -1.03599277838022E+03; Pars: 9.123922E-01, 4.473948E-01, 1.335442E-01
, 1.928436E+00, -1.445389E-01"
## [1] "Llh: -1.03429228634083E+03; Pars: 9.098262E-01, 4.696907E-01, 1.632112E-01
, 1.851214E+00, -9.292558E-02"
## [1] "Llh: -1.03405779698198E+03; Pars: 8.789050E-01, 4.715382E-01, 1.932306E-01
, 1.837071E+00, -3.829960E-02"
## [1] "Llh: -1.03407667576092E+03; Pars: 9.077367E-01, 4.368299E-01, 1.873347E-01

```

```

, 1.773324E+00, -7.417184E-02"
## [1] "Llh: -1.03414617118369E+03; Pars: 9.174668E-01, 4.501166E-01, 1.684191E-01
, 1.810258E+00, -9.781658E-02"
## [1] "Llh: -1.03487479606091E+03; Pars: 8.566676E-01, 4.219206E-01, 2.439373E-01
, 1.963060E+00, -1.087816E-01"
## [1] "Llh: -1.03420919347236E+03; Pars: 8.855044E-01, 4.375111E-01, 2.061679E-01
, 1.907254E+00, -1.108380E-01"
## [1] "Llh: -1.03432169933500E+03; Pars: 9.055354E-01, 4.559562E-01, 2.323021E-01
, 1.772734E+00, -6.776929E-02"
## [1] "Llh: -1.03388994511414E+03; Pars: 9.072496E-01, 4.538006E-01, 2.076126E-01
, 1.810439E+00, -8.696170E-02"
## [1] "Llh: -1.03465401298510E+03; Pars: 7.781688E-01, 4.416267E-01, 2.722845E-01
, 1.921401E+00, -5.951708E-02"
## [1] "Llh: -1.03390543238509E+03; Pars: 8.341013E-01, 4.460480E-01, 2.357503E-01
, 1.887168E+00, -7.813349E-02"
## [1] "Llh: -1.03561388492386E+03; Pars: 8.946250E-01, 4.441909E-01, 2.103036E-01
, 1.745245E+00, 1.811656E-02"
## [1] "Llh: -1.03411276526682E+03; Pars: 8.767366E-01, 4.513721E-01, 2.038770E-01
, 1.892984E+00, -1.255797E-01"
## [1] "Llh: -1.03416357605600E+03; Pars: 8.763872E-01, 4.665038E-01, 2.049543E-01
, 1.774408E+00, -5.042054E-02"
## [1] "Llh: -1.03385375227485E+03; Pars: 8.786665E-01, 4.590803E-01, 2.052577E-01
, 1.806726E+00, -6.552490E-02"
## [1] "Llh: -1.03487521583180E+03; Pars: 8.859271E-01, 4.552512E-01, 2.077973E-01
, 1.754743E+00, -1.165695E-02"
## [1] "Llh: -1.03379651018800E+03; Pars: 8.790342E-01, 4.523388E-01, 2.048571E-01
, 1.857435E+00, -9.709898E-02"
## [1] "Llh: -1.03442932295887E+03; Pars: 8.434460E-01, 4.770173E-01, 2.313486E-01
, 1.908194E+00, -7.223563E-02"
## [1] "Llh: -1.03382001001251E+03; Pars: 8.916640E-01, 4.465476E-01, 1.983382E-01
, 1.806120E+00, -7.368778E-02"
## [1] "Llh: -1.03356064175542E+03; Pars: 8.773813E-01, 4.323843E-01, 2.274958E-01
, 1.829502E+00, -1.222631E-01"
## [1] "Llh: -1.03351883241410E+03; Pars: 8.766194E-01, 4.140439E-01, 2.446284E-01
, 1.825730E+00, -1.642449E-01"
## [1] "Llh: -1.03450582807109E+03; Pars: 9.391922E-01, 4.436812E-01, 1.885273E-01
, 1.757513E+00, -1.168738E-01"
## [1] "Llh: -1.03368193585424E+03; Pars: 8.603740E-01, 4.454551E-01, 2.239446E-01
, 1.853884E+00, -8.781857E-02"
## [1] "Llh: -1.03345210883611E+03; Pars: 8.472937E-01, 4.328756E-01, 2.231977E-01
, 1.849459E+00, -1.083884E-01"
## [1] "Llh: -1.03332019592771E+03; Pars: 8.173157E-01, 4.227777E-01, 2.309903E-01
, 1.869283E+00, -1.191017E-01"
## [1] "Llh: -1.03355091120014E+03; Pars: 8.513364E-01, 4.140273E-01, 2.358457E-01
, 1.878666E+00, -1.512559E-01"
## [1] "Llh: -1.03350875256686E+03; Pars: 8.581690E-01, 4.248581E-01, 2.281987E-01
, 1.860417E+00, -1.298231E-01"
## [1] "Llh: -1.03362796584871E+03; Pars: 8.249409E-01, 4.172538E-01, 2.547094E-01
, 1.901693E+00, -1.655471E-01"
## [1] "Llh: -1.03351793551609E+03; Pars: 8.416217E-01, 4.243920E-01, 2.406166E-01

```

```

, 1.877336E+00, -1.425823E-01"
## [1] "Llh: -1.03322431131916E+03; Pars: 8.226057E-01, 4.015370E-01, 2.624943E-01
, 1.857056E+00, -1.603293E-01"
## [1] "Llh: -1.03311520415594E+03; Pars: 7.943915E-01, 3.783176E-01, 2.913129E-01
, 1.856867E+00, -1.919444E-01"
## [1] "Llh: -1.03329519794356E+03; Pars: 8.148729E-01, 3.819499E-01, 2.703542E-01
, 1.861810E+00, -2.112600E-01"
## [1] "Llh: -1.03327179479465E+03; Pars: 8.262482E-01, 3.969226E-01, 2.587518E-01
, 1.859825E+00, -1.803997E-01"
## [1] "Llh: -1.03331753891592E+03; Pars: 7.784790E-01, 4.040432E-01, 2.553197E-01
, 1.904564E+00, -1.412956E-01"
## [1] "Llh: -1.03327597109297E+03; Pars: 8.030141E-01, 4.065205E-01, 2.526469E-01
, 1.884542E+00, -1.470329E-01"
## [1] "Llh: -1.03305436723921E+03; Pars: 7.980337E-01, 3.874656E-01, 2.641436E-01
, 1.855050E+00, -1.647384E-01"
## [1] "Llh: -1.03294393894930E+03; Pars: 7.762397E-01, 3.702254E-01, 2.759071E-01
, 1.844006E+00, -1.758165E-01"
## [1] "Llh: -1.03294258572286E+03; Pars: 7.487147E-01, 3.663071E-01, 2.956448E-01
, 1.865298E+00, -1.958949E-01"
## [1] "Llh: -1.03300780403005E+03; Pars: 6.939876E-01, 3.401309E-01, 3.293679E-01
, 1.867744E+00, -2.289308E-01"
## [1] "Llh: -1.03313933406973E+03; Pars: 7.621276E-01, 3.475925E-01, 3.187151E-01
, 1.854866E+00, -2.373336E-01"
## [1] "Llh: -1.03305278414688E+03; Pars: 7.759246E-01, 3.650319E-01, 2.967839E-01
, 1.858460E+00, -2.077757E-01"
## [1] "Llh: -1.03316163645261E+03; Pars: 7.655934E-01, 3.462577E-01, 3.147133E-01
, 1.829620E+00, -2.336996E-01"
## [1] "Llh: -1.03305136288289E+03; Pars: 7.749486E-01, 3.604294E-01, 2.991967E-01
, 1.843199E+00, -2.120329E-01"
## [1] "Llh: -1.03304553674710E+03; Pars: 7.218395E-01, 3.412100E-01, 3.247864E-01
, 1.847288E+00, -2.129861E-01"
## [1] "Llh: -1.03298579747823E+03; Pars: 7.479416E-01, 3.543585E-01, 3.082777E-01
, 1.850414E+00, -2.048395E-01"
## [1] "Llh: -1.03289994164997E+03; Pars: 7.351162E-01, 3.487431E-01, 2.990112E-01
, 1.847656E+00, -2.065994E-01"
## [1] "Llh: -1.03288231369709E+03; Pars: 7.054785E-01, 3.348345E-01, 3.028604E-01
, 1.843068E+00, -2.139268E-01"
## [1] "Llh: -1.03285949078519E+03; Pars: 7.254047E-01, 3.491653E-01, 2.959708E-01
, 1.839942E+00, -1.932286E-01"
## [1] "Llh: -1.03284545236078E+03; Pars: 7.001447E-01, 3.414925E-01, 2.955642E-01
, 1.830752E+00, -1.859550E-01"
## [1] "Llh: -1.03275264291229E+03; Pars: 6.964592E-01, 3.460717E-01, 2.921050E-01
, 1.850155E+00, -1.785402E-01"
## [1] "Llh: -1.03268899681470E+03; Pars: 6.572145E-01, 3.391088E-01, 2.885592E-01
, 1.853643E+00, -1.617939E-01"
## [1] "Llh: -1.03266026257182E+03; Pars: 6.871752E-01, 3.458613E-01, 2.751366E-01
, 1.844225E+00, -1.685154E-01"
## [1] "Llh: -1.03257060211452E+03; Pars: 6.567920E-01, 3.416894E-01, 2.585660E-01
, 1.841138E+00, -1.503533E-01"
## [1] "Llh: -1.03277476036389E+03; Pars: 6.110981E-01, 3.205861E-01, 3.005708E-01

```

```

, 1.849483E+00, -1.873531E-01"
## [1] "Llh: -1.03271495473863E+03; Pars: 6.523835E-01, 3.323342E-01, 2.944049E-01
, 1.848112E+00, -1.844690E-01"
## [1] "Llh: -1.03294388693243E+03; Pars: 6.000905E-01, 3.116430E-01, 2.803371E-01
, 1.821614E+00, -1.627043E-01"
## [1] "Llh: -1.03277502858242E+03; Pars: 7.115587E-01, 3.518021E-01, 2.918179E-01
, 1.854280E+00, -1.875973E-01"
## [1] "Llh: -1.03260503622859E+03; Pars: 6.457588E-01, 3.477442E-01, 2.687045E-01
, 1.848063E+00, -1.341406E-01"
## [1] "Llh: -1.03263491106624E+03; Pars: 6.606887E-01, 3.444708E-01, 2.772435E-01
, 1.846813E+00, -1.540871E-01"
## [1] "Llh: -1.03249404913688E+03; Pars: 6.293383E-01, 3.434475E-01, 2.652567E-01
, 1.867514E+00, -1.413866E-01"
## [1] "Llh: -1.03240722667136E+03; Pars: 5.939351E-01, 3.444293E-01, 2.501030E-01
, 1.886170E+00, -1.191023E-01"
## [1] "Llh: -1.03254030800153E+03; Pars: 5.708749E-01, 3.305703E-01, 2.523171E-01
, 1.856436E+00, -1.123464E-01"
## [1] "Llh: -1.03252551254649E+03; Pars: 6.060458E-01, 3.357550E-01, 2.621923E-01
, 1.855897E+00, -1.311591E-01"
## [1] "Llh: -1.03246816747898E+03; Pars: 6.115150E-01, 3.513711E-01, 2.368451E-01
, 1.865767E+00, -9.415071E-02"
## [1] "Llh: -1.03248361198117E+03; Pars: 6.217321E-01, 3.465120E-01, 2.512351E-01
, 1.861337E+00, -1.167303E-01"
## [1] "Llh: -1.03238054318840E+03; Pars: 5.884042E-01, 3.492794E-01, 2.220052E-01
, 1.865057E+00, -8.976852E-02"
## [1] "Llh: -1.03238217454137E+03; Pars: 5.539991E-01, 3.544785E-01, 1.887282E-01
, 1.870791E+00, -5.375584E-02"
## [1] "Llh: -1.03234147343226E+03; Pars: 5.769180E-01, 3.412066E-01, 2.231802E-01
, 1.877550E+00, -9.967303E-02"
## [1] "Llh: -1.03232156166685E+03; Pars: 5.424976E-01, 3.379840E-01, 2.004180E-01
, 1.892469E+00, -8.243926E-02"
## [1] "Llh: -1.03240943218393E+03; Pars: 5.201671E-01, 3.457415E-01, 2.100594E-01
, 1.905455E+00, -5.629463E-02"
## [1] "Llh: -1.03236888506129E+03; Pars: 5.543233E-01, 3.447240E-01, 2.221861E-01
, 1.889169E+00, -7.980930E-02"
## [1] "Llh: -1.03237440985134E+03; Pars: 5.502243E-01, 3.555824E-01, 1.904306E-01
, 1.903786E+00, -5.494896E-02"
## [1] "Llh: -1.03234429398564E+03; Pars: 5.641797E-01, 3.505184E-01, 2.083711E-01
, 1.891699E+00, -7.400149E-02"
## [1] "Llh: -1.03229276137198E+03; Pars: 5.258210E-01, 3.394490E-01, 2.043882E-01
, 1.904200E+00, -8.389765E-02"
## [1] "Llh: -1.03233044562052E+03; Pars: 4.829740E-01, 3.336405E-01, 1.881597E-01
, 1.923712E+00, -7.877112E-02"
## [1] "Llh: -1.03239471954157E+03; Pars: 5.161552E-01, 3.442788E-01, 1.728444E-01
, 1.890783E+00, -4.486417E-02"
## [1] "Llh: -1.03233768161248E+03; Pars: 5.356002E-01, 3.443164E-01, 1.921591E-01
, 1.889628E+00, -6.342371E-02"
## [1] "Llh: -1.03235926256555E+03; Pars: 5.005645E-01, 3.375603E-01, 1.890038E-01
, 1.922224E+00, -6.366005E-02"
## [1] "Llh: -1.03232613569381E+03; Pars: 5.225244E-01, 3.404527E-01, 1.972541E-01

```

```

, 1.907770E+00, -7.018716E-02"
## [1] "Llh: -1.03235369889980E+03; Pars: 5.219258E-01, 3.403195E-01, 1.788501E-01
, 1.905143E+00, -6.977041E-02"
## [1] "Llh: -1.03232292746471E+03; Pars: 5.300252E-01, 3.414153E-01, 1.896841E-01
, 1.901137E+00, -7.228013E-02"
## [1] "Llh: -1.03235426692840E+03; Pars: 4.984077E-01, 3.311894E-01, 1.851903E-01
, 1.906386E+00, -7.488968E-02"
## [1] "Llh: -1.03232103409656E+03; Pars: 5.477367E-01, 3.455829E-01, 2.025759E-01
, 1.895360E+00, -7.422354E-02"
## [1] "Llh: -1.03230990897354E+03; Pars: 5.318418E-01, 3.376504E-01, 2.055691E-01
, 1.910789E+00, -8.978739E-02"
## [1] "Llh: -1.03230798412588E+03; Pars: 5.327814E-01, 3.393047E-01, 2.022166E-01
, 1.905476E+00, -8.319647E-02"
## [1] "Llh: -1.03230370242429E+03; Pars: 5.490203E-01, 3.410213E-01, 2.024590E-01
, 1.891707E+00, -8.822766E-02"
## [1] "Llh: -1.03230471106786E+03; Pars: 5.423963E-01, 3.408791E-01, 2.011578E-01
, 1.895710E+00, -8.371753E-02"
## [1] "Llh: -1.03230499156175E+03; Pars: 5.491176E-01, 3.399028E-01, 2.151389E-01
, 1.894536E+00, -9.251370E-02"
## [1] "Llh: -1.03230304753741E+03; Pars: 5.443445E-01, 3.402803E-01, 2.087752E-01
, 1.896184E+00, -8.745531E-02"
## [1] "Llh: -1.03229256162435E+03; Pars: 5.373839E-01, 3.442848E-01, 2.077479E-01
, 1.904707E+00, -8.436099E-02"
## [1] "Llh: -1.03229285546941E+03; Pars: 5.348270E-01, 3.474791E-01, 2.114129E-01
, 1.910855E+00, -8.532185E-02"
## [1] "Llh: -1.03228993995506E+03; Pars: 5.280037E-01, 3.362080E-01, 2.076589E-01
, 1.905547E+00, -9.663169E-02"
## [1] "Llh: -1.03229960148947E+03; Pars: 5.181373E-01, 3.316163E-01, 2.102004E-01
, 1.910661E+00, -1.078358E-01"
## [1] "Llh: -1.03228069525312E+03; Pars: 5.410480E-01, 3.411753E-01, 2.101951E-01
, 1.895459E+00, -9.303285E-02"
## [1] "Llh: -1.03227303329908E+03; Pars: 5.451813E-01, 3.421145E-01, 2.141844E-01
, 1.890470E+00, -9.795104E-02"
## [1] "Llh: -1.03228247211068E+03; Pars: 5.232734E-01, 3.398927E-01, 2.146429E-01
, 1.908755E+00, -9.189101E-02"
## [1] "Llh: -1.03228251891877E+03; Pars: 5.297102E-01, 3.401745E-01, 2.115969E-01
, 1.904479E+00, -9.097517E-02"
## [1] "Llh: -1.03226428704998E+03; Pars: 5.195209E-01, 3.404777E-01, 2.106736E-01
, 1.909289E+00, -9.443764E-02"
## [1] "Llh: -1.03225220415727E+03; Pars: 5.071090E-01, 3.405765E-01, 2.116229E-01
, 1.915875E+00, -9.792881E-02"
## [1] "Llh: -1.03225803811878E+03; Pars: 5.305596E-01, 3.417646E-01, 2.179546E-01
, 1.905906E+00, -1.036078E-01"
## [1] "Llh: -1.03226419480684E+03; Pars: 5.293749E-01, 3.411842E-01, 2.145630E-01
, 1.905479E+00, -9.868024E-02"
## [1] "Llh: -1.03225707995267E+03; Pars: 5.162669E-01, 3.359753E-01, 2.186775E-01
, 1.905879E+00, -1.108431E-01"
## [1] "Llh: -1.03225933387708E+03; Pars: 5.215462E-01, 3.380337E-01, 2.159451E-01
, 1.905586E+00, -1.042226E-01"
## [1] "Llh: -1.03223698417345E+03; Pars: 5.209524E-01, 3.439513E-01, 2.231740E-01

```

```

, 1.905170E+00, -1.042570E-01"
## [1] "Llh: -1.03222463508367E+03; Pars: 5.174267E-01, 3.478896E-01, 2.309316E-01
, 1.904982E+00, -1.080697E-01"
## [1] "Llh: -1.03221974361829E+03; Pars: 5.233440E-01, 3.434020E-01, 2.227055E-01
, 1.900464E+00, -1.154692E-01"
## [1] "Llh: -1.03220670523663E+03; Pars: 5.233793E-01, 3.451703E-01, 2.267368E-01
, 1.896331E+00, -1.272582E-01"
## [1] "Llh: -1.03221824500046E+03; Pars: 4.927153E-01, 3.423877E-01, 2.281849E-01
, 1.921223E+00, -1.211320E-01"
## [1] "Llh: -1.03222050410748E+03; Pars: 5.058318E-01, 3.423193E-01, 2.246848E-01
, 1.913488E+00, -1.153368E-01"
## [1] "Llh: -1.03219145906263E+03; Pars: 4.921993E-01, 3.429880E-01, 2.285069E-01
, 1.911775E+00, -1.224850E-01"
## [1] "Llh: -1.03217081242475E+03; Pars: 4.730192E-01, 3.436013E-01, 2.337831E-01
, 1.914716E+00, -1.319236E-01"
## [1] "Llh: -1.03215879098884E+03; Pars: 4.891929E-01, 3.520445E-01, 2.338262E-01
, 1.915343E+00, -1.236818E-01"
## [1] "Llh: -1.03212950093362E+03; Pars: 4.756558E-01, 3.603651E-01, 2.414005E-01
, 1.920093E+00, -1.301011E-01"
## [1] "Llh: -1.03215252076733E+03; Pars: 4.857695E-01, 3.552234E-01, 2.527919E-01
, 1.907026E+00, -1.494650E-01"
## [1] "Llh: -1.03215823460329E+03; Pars: 4.911044E-01, 3.515036E-01, 2.424996E-01
, 1.909234E+00, -1.365810E-01"
## [1] "Llh: -1.03215700673763E+03; Pars: 4.627889E-01, 3.506702E-01, 2.422273E-01
, 1.918754E+00, -1.558823E-01"
## [1] "Llh: -1.03215301123691E+03; Pars: 4.764484E-01, 3.499729E-01, 2.394034E-01
, 1.915301E+00, -1.439292E-01"
## [1] "Llh: -1.03211119212325E+03; Pars: 4.809935E-01, 3.594419E-01, 2.494613E-01
, 1.900185E+00, -1.519388E-01"
## [1] "Llh: -1.03209934210239E+03; Pars: 4.751326E-01, 3.682849E-01, 2.600995E-01
, 1.889752E+00, -1.673423E-01"
## [1] "Llh: -1.03210264704945E+03; Pars: 4.310309E-01, 3.659094E-01, 2.642546E-01
, 1.922454E+00, -1.618462E-01"
## [1] "Llh: -1.03210626626005E+03; Pars: 4.541180E-01, 3.606107E-01, 2.548751E-01
, 1.915890E+00, -1.531992E-01"
## [1] "Llh: -1.03210375081170E+03; Pars: 4.645957E-01, 3.769464E-01, 2.693969E-01
, 1.907069E+00, -1.691499E-01"
## [1] "Llh: -1.03210071493989E+03; Pars: 4.667016E-01, 3.683184E-01, 2.604934E-01
, 1.908978E+00, -1.598433E-01"
## [1] "Llh: -1.03209765047057E+03; Pars: 4.572678E-01, 3.777249E-01, 2.722126E-01
, 1.903965E+00, -1.635100E-01"
## [1] "Llh: -1.03213681124902E+03; Pars: 4.476775E-01, 3.924155E-01, 2.886172E-01
, 1.898323E+00, -1.733005E-01"
## [1] "Llh: -1.03203765582858E+03; Pars: 4.365460E-01, 3.813978E-01, 2.665924E-01
, 1.911000E+00, -1.635922E-01"
## [1] "Llh: -1.03199943855055E+03; Pars: 4.119342E-01, 3.951997E-01, 2.734926E-01
, 1.912989E+00, -1.706557E-01"
## [1] "Llh: -1.03210776010798E+03; Pars: 4.211710E-01, 3.900916E-01, 2.908205E-01
, 1.895183E+00, -1.991779E-01"
## [1] "Llh: -1.03207472070079E+03; Pars: 4.347922E-01, 3.824376E-01, 2.784655E-01

```

```

, 1.901380E+00, -1.819087E-01"
## [1] "Llh: -1.03206520761176E+03; Pars: 4.673004E-01, 3.910303E-01, 2.736509E-01
, 1.884528E+00, -1.754578E-01"
## [1] "Llh: -1.03205885612033E+03; Pars: 4.582331E-01, 3.845929E-01, 2.713018E-01
, 1.893939E+00, -1.720549E-01"
## [1] "Llh: -1.03203498411486E+03; Pars: 4.282424E-01, 3.952499E-01, 2.817354E-01
, 1.891837E+00, -1.823453E-01"
## [1] "Llh: -1.03204241124348E+03; Pars: 4.378572E-01, 3.883378E-01, 2.764249E-01
, 1.896108E+00, -1.767198E-01"
## [1] "Llh: -1.03206844104440E+03; Pars: 4.010553E-01, 4.066178E-01, 2.907837E-01
, 1.911926E+00, -1.808476E-01"
## [1] "Llh: -1.03204805720639E+03; Pars: 4.195746E-01, 3.966758E-01, 2.831126E-01
, 1.906359E+00, -1.774713E-01"
## [1] "Llh: -1.03199477009570E+03; Pars: 4.038428E-01, 4.042953E-01, 2.830306E-01
, 1.898608E+00, -1.902643E-01"
## [1] "Llh: -1.03197192725436E+03; Pars: 3.771304E-01, 4.182735E-01, 2.884396E-01
, 1.895934E+00, -2.036415E-01"
## [1] "Llh: -1.03196026297223E+03; Pars: 4.032536E-01, 4.138792E-01, 2.807673E-01
, 1.899010E+00, -1.805588E-01"
## [1] "Llh: -1.03192393265240E+03; Pars: 3.874844E-01, 4.305565E-01, 2.819181E-01
, 1.897825E+00, -1.798838E-01"
## [1] "Llh: -1.03194682798117E+03; Pars: 3.515133E-01, 4.305708E-01, 2.921775E-01
, 1.908034E+00, -1.935441E-01"
## [1] "Llh: -1.03195896188752E+03; Pars: 3.781933E-01, 4.185851E-01, 2.869586E-01
, 1.904501E+00, -1.881718E-01"
## [1] "Llh: -1.03189518520844E+03; Pars: 3.629473E-01, 4.313736E-01, 2.839927E-01
, 1.896270E+00, -1.945569E-01"
## [1] "Llh: -1.03185451861090E+03; Pars: 3.346336E-01, 4.498446E-01, 2.844327E-01
, 1.891246E+00, -2.030997E-01"
## [1] "Llh: -1.03187311729299E+03; Pars: 3.168359E-01, 4.559255E-01, 2.864488E-01
, 1.910587E+00, -1.979846E-01"
## [1] "Llh: -1.03188749727733E+03; Pars: 3.446876E-01, 4.399348E-01, 2.852705E-01
, 1.905882E+00, -1.940748E-01"
## [1] "Llh: -1.03192547014322E+03; Pars: 2.951048E-01, 4.828142E-01, 2.998741E-01
, 1.888512E+00, -2.206057E-01"
## [1] "Llh: -1.03189559879059E+03; Pars: 3.243122E-01, 4.592394E-01, 2.932787E-01
, 1.894602E+00, -2.081182E-01"
## [1] "Llh: -1.03185904222499E+03; Pars: 3.087814E-01, 4.735521E-01, 2.868628E-01
, 1.904964E+00, -1.894107E-01"
## [1] "Llh: -1.03186463288224E+03; Pars: 3.258686E-01, 4.590827E-01, 2.872570E-01
, 1.902703E+00, -1.929684E-01"
## [1] "Llh: -1.03183083178033E+03; Pars: 3.173057E-01, 4.778733E-01, 2.809989E-01
, 1.891665E+00, -1.978547E-01"
## [1] "Llh: -1.03184062567825E+03; Pars: 3.002018E-01, 5.034391E-01, 2.754096E-01
, 1.883532E+00, -2.000100E-01"
## [1] "Llh: -1.03187126261020E+03; Pars: 2.532631E-01, 4.982419E-01, 2.908906E-01
, 1.899369E+00, -2.187034E-01"
## [1] "Llh: -1.03184898010834E+03; Pars: 2.868184E-01, 4.803831E-01, 2.886475E-01
, 1.898983E+00, -2.089985E-01"
## [1] "Llh: -1.03180348455451E+03; Pars: 3.014379E-01, 4.756097E-01, 2.776776E-01

```

```

, 1.904359E+00, -1.908210E-01"
## [1] "Llh: -1.03178131722899E+03; Pars: 2.900007E-01, 4.840125E-01, 2.698770E-01
, 1.909257E+00, -1.821724E-01"
## [1] "Llh: -1.03179275084345E+03; Pars: 2.981800E-01, 4.906605E-01, 2.778787E-01
, 1.887900E+00, -1.946298E-01"
## [1] "Llh: -1.03180320721860E+03; Pars: 3.028440E-01, 4.817362E-01, 2.800212E-01
, 1.893546E+00, -1.954685E-01"
## [1] "Llh: -1.03180691741471E+03; Pars: 3.019940E-01, 4.791511E-01, 2.738712E-01
, 1.886669E+00, -2.052913E-01"
## [1] "Llh: -1.03180169524917E+03; Pars: 3.036908E-01, 4.777452E-01, 2.771191E-01
, 1.891226E+00, -2.013212E-01"
## [1] "Llh: -1.03183476639420E+03; Pars: 2.637647E-01, 5.166915E-01, 2.733758E-01
, 1.900346E+00, -1.908909E-01"
## [1] "Llh: -1.03180826533233E+03; Pars: 2.814819E-01, 4.991018E-01, 2.761400E-01
, 1.898067E+00, -1.939431E-01"
## [1] "Llh: -1.03176339459854E+03; Pars: 3.094452E-01, 4.912998E-01, 2.641580E-01
, 1.892239E+00, -1.789700E-01"
## [1] "Llh: -1.03175212259169E+03; Pars: 3.207585E-01, 4.968508E-01, 2.519132E-01
, 1.888876E+00, -1.639557E-01"
## [1] "Llh: -1.03174061005431E+03; Pars: 2.803391E-01, 5.016338E-01, 2.601723E-01
, 1.898438E+00, -1.765542E-01"
## [1] "Llh: -1.03172955728693E+03; Pars: 2.618558E-01, 5.139535E-01, 2.497589E-01
, 1.901834E+00, -1.659039E-01"
## [1] "Llh: -1.03171263372962E+03; Pars: 3.083125E-01, 4.859643E-01, 2.544787E-01
, 1.893536E+00, -1.692501E-01"
## [1] "Llh: -1.03168840285792E+03; Pars: 3.217278E-01, 4.795258E-01, 2.436481E-01
, 1.891275E+00, -1.569036E-01"
## [1] "Llh: -1.03173661921402E+03; Pars: 2.933183E-01, 5.084444E-01, 2.401113E-01
, 1.900405E+00, -1.441050E-01"
## [1] "Llh: -1.03172444292242E+03; Pars: 2.959114E-01, 5.005894E-01, 2.493632E-01
, 1.898106E+00, -1.584090E-01"
## [1] "Llh: -1.03173584779963E+03; Pars: 2.979217E-01, 4.990441E-01, 2.279454E-01
, 1.907863E+00, -1.363081E-01"
## [1] "Llh: -1.03171906888434E+03; Pars: 2.979863E-01, 4.969349E-01, 2.404288E-01
, 1.902853E+00, -1.508885E-01"
## [1] "Llh: -1.03172441389949E+03; Pars: 3.092952E-01, 5.112586E-01, 2.241679E-01
, 1.883988E+00, -1.362519E-01"
## [1] "Llh: -1.03171038577094E+03; Pars: 3.044716E-01, 5.043066E-01, 2.355952E-01
, 1.890274E+00, -1.477320E-01"
## [1] "Llh: -1.03167387184802E+03; Pars: 2.720226E-01, 5.010241E-01, 2.356045E-01
, 1.904880E+00, -1.479791E-01"
## [1] "Llh: -1.03165528751462E+03; Pars: 2.476547E-01, 5.031239E-01, 2.274501E-01
, 1.912933E+00, -1.399908E-01"
## [1] "Llh: -1.03168306374225E+03; Pars: 3.252449E-01, 4.802433E-01, 2.288352E-01
, 1.896309E+00, -1.356656E-01"
## [1] "Llh: -1.03168226815210E+03; Pars: 3.093976E-01, 4.884577E-01, 2.340661E-01
, 1.897689E+00, -1.432252E-01"
## [1] "Llh: -1.03165936705170E+03; Pars: 2.965837E-01, 4.882492E-01, 2.231121E-01
, 1.899868E+00, -1.370870E-01"
## [1] "Llh: -1.03166827932940E+03; Pars: 2.964157E-01, 4.913054E-01, 2.296749E-01

```

```

, 1.899427E+00, -1.424175E-01"
## [1] "Llh: -1.03163324495278E+03; Pars: 2.939478E-01, 4.883830E-01, 2.251199E-01
, 1.893938E+00, -1.390870E-01"
## [1] "Llh: -1.03161005479598E+03; Pars: 2.919286E-01, 4.841624E-01, 2.174654E-01
, 1.889497E+00, -1.331862E-01"
## [1] "Llh: -1.03160276892263E+03; Pars: 2.824454E-01, 4.734607E-01, 2.227016E-01
, 1.906228E+00, -1.364251E-01"
## [1] "Llh: -1.03157888827799E+03; Pars: 2.714322E-01, 4.587527E-01, 2.162548E-01
, 1.914255E+00, -1.307716E-01"
## [1] "Llh: -1.03161091499677E+03; Pars: 2.450710E-01, 4.891851E-01, 2.036913E-01
, 1.914446E+00, -1.168008E-01"
## [1] "Llh: -1.03160993381061E+03; Pars: 2.642352E-01, 4.867522E-01, 2.136805E-01
, 1.908626E+00, -1.268265E-01"
## [1] "Llh: -1.03156830726237E+03; Pars: 2.393362E-01, 4.795686E-01, 2.051190E-01
, 1.912366E+00, -1.239196E-01"
## [1] "Llh: -1.03155891373233E+03; Pars: 2.043055E-01, 4.751849E-01, 1.906454E-01
, 1.919746E+00, -1.142668E-01"
## [1] "Llh: -1.03152630367693E+03; Pars: 2.152387E-01, 4.745965E-01, 2.030864E-01
, 1.918143E+00, -1.209298E-01"
## [1] "Llh: -1.03149552617840E+03; Pars: 1.745662E-01, 4.679140E-01, 1.930736E-01
, 1.927346E+00, -1.128511E-01"
## [1] "Llh: -1.03157331924313E+03; Pars: 2.349324E-01, 4.473913E-01, 1.849978E-01
, 1.910770E+00, -1.071701E-01"
## [1] "Llh: -1.03154601363943E+03; Pars: 2.381130E-01, 4.607172E-01, 1.956109E-01
, 1.911311E+00, -1.153753E-01"
## [1] "Llh: -1.03156605020140E+03; Pars: 1.691322E-01, 4.557732E-01, 1.862406E-01
, 1.943373E+00, -1.068504E-01"
## [1] "Llh: -1.03154384380652E+03; Pars: 1.998313E-01, 4.627105E-01, 1.940468E-01
, 1.929761E+00, -1.134343E-01"
## [1] "Llh: -1.03154459047057E+03; Pars: 1.710641E-01, 4.442552E-01, 1.821721E-01
, 1.932388E+00, -1.078532E-01"
## [1] "Llh: -1.03152901870216E+03; Pars: 1.943569E-01, 4.545183E-01, 1.900492E-01
, 1.926420E+00, -1.125965E-01"
## [1] "Llh: -1.03156103570896E+03; Pars: 1.330369E-01, 4.696247E-01, 1.691156E-01
, 1.931594E+00, -9.663801E-02"
## [1] "Llh: -1.03153533556162E+03; Pars: 1.676357E-01, 4.668828E-01, 1.809004E-01
, 1.927245E+00, -1.051714E-01"
## [1] "Llh: -1.03150513661895E+03; Pars: 1.854958E-01, 4.501995E-01, 1.908269E-01
, 1.929075E+00, -1.095046E-01"
## [1] "Llh: -1.03151312713688E+03; Pars: 1.901982E-01, 4.563199E-01, 1.907815E-01
, 1.926739E+00, -1.106952E-01"
## [1] "Llh: -1.03151946024474E+03; Pars: 1.306414E-01, 4.600674E-01, 1.839479E-01
, 1.944773E+00, -1.060479E-01"
## [1] "Llh: -1.03151497963429E+03; Pars: 1.575093E-01, 4.602298E-01, 1.868636E-01
, 1.936353E+00, -1.083798E-01"
## [1] "Llh: -1.03149186175934E+03; Pars: 1.519943E-01, 4.571015E-01, 1.826387E-01
, 1.928807E+00, -1.059671E-01"
## [1] "Llh: -1.03148221867146E+03; Pars: 1.280757E-01, 4.543225E-01, 1.769346E-01
, 1.928330E+00, -1.022334E-01"
## [1] "Llh: -1.03147580456517E+03; Pars: 1.683658E-01, 4.481019E-01, 1.941988E-01

```

```

, 1.931761E+00, -1.130548E-01"
## [1] "Llh: -1.03146535911905E+03; Pars: 1.687309E-01, 4.389966E-01, 2.008480E-01
, 1.934023E+00, -1.169965E-01"
## [1] "Llh: -1.03144150827896E+03; Pars: 1.313943E-01, 4.539386E-01, 1.893695E-01
, 1.935635E+00, -1.073897E-01"
## [1] "Llh: -1.03140550006433E+03; Pars: 9.991303E-02, 4.536490E-01, 1.890297E-01
, 1.940259E+00, -1.047862E-01"
## [1] "Llh: -1.03142260083876E+03; Pars: 1.452034E-01, 4.457301E-01, 1.934214E-01
, 1.927260E+00, -1.101690E-01"
## [1] "Llh: -1.03143938286528E+03; Pars: 1.482799E-01, 4.493116E-01, 1.917820E-01
, 1.929529E+00, -1.097217E-01"
## [1] "Llh: -1.03138801971843E+03; Pars: 1.010999E-01, 4.538458E-01, 1.904960E-01
, 1.933802E+00, -1.093099E-01"
## [1] "Llh: -1.03133952139795E+03; Pars: 5.890195E-02, 4.556801E-01, 1.903305E-01
, 1.936170E+00, -1.092125E-01"
## [1] "Llh: -1.03139778223402E+03; Pars: 6.576376E-02, 4.320608E-01, 1.871521E-01
, 1.939077E+00, -1.045079E-01"
## [1] "Llh: -1.03139830826632E+03; Pars: 9.296438E-02, 4.407580E-01, 1.886325E-01
, 1.936137E+00, -1.065937E-01"
## [1] "Llh: -1.03135896519094E+03; Pars: 8.732946E-02, 4.361330E-01, 2.073781E-01
, 1.942399E+00, -1.160354E-01"
## [1] "Llh: -1.03137172436982E+03; Pars: 9.751603E-02, 4.406109E-01, 1.997672E-01
, 1.938873E+00, -1.125849E-01"
## [1] "Llh: -1.03130590981441E+03; Pars: 1.411375E-02, 4.501789E-01, 1.860767E-01
, 1.940033E+00, -1.008879E-01"
## [1] "Llh: -1.03126212801626E+03; Pars: -6.319482E-02, 4.558764E-01, 1.786911E-01
, 1.943045E+00, -9.283365E-02"
## [1] "Llh: -1.03128154461351E+03; Pars: -4.571803E-02, 4.473881E-01, 1.876111E-01
, 1.953204E+00, -1.007813E-01"
## [1] "Llh: -1.03130499389568E+03; Pars: 2.012323E-03, 4.469730E-01, 1.890637E-01
, 1.946685E+00, -1.031282E-01"
## [1] "Llh: -1.03126771761663E+03; Pars: -5.868010E-02, 4.371416E-01, 1.914355E-01
, 1.945285E+00, -1.045621E-01"
## [1] "Llh: -1.03128492310801E+03; Pars: -1.903182E-02, 4.412113E-01, 1.908340E-01
, 1.944027E+00, -1.046181E-01"
## [1] "Llh: -1.03120879419850E+03; Pars: -7.430838E-02, 4.611351E-01, 1.950265E-01
, 1.948962E+00, -1.048621E-01"
## [1] "Llh: -1.03117638700905E+03; Pars: -1.443444E-01, 4.763979E-01, 1.989636E-01
, 1.953924E+00, -1.050391E-01"
## [1] "Llh: -1.03124051528172E+03; Pars: -1.885436E-01, 4.732542E-01, 1.714347E-01
, 1.950237E+00, -8.893606E-02"
## [1] "Llh: -1.03122614905351E+03; Pars: -1.195754E-01, 4.636877E-01, 1.804205E-01
, 1.948275E+00, -9.571090E-02"
## [1] "Llh: -1.03118451946297E+03; Pars: -2.315071E-01, 4.561205E-01, 1.845183E-01
, 1.961395E+00, -9.035831E-02"
## [1] "Llh: -1.03119539937486E+03; Pars: -1.589048E-01, 4.560104E-01, 1.859713E-01
, 1.955058E+00, -9.507186E-02"
## [1] "Llh: -1.03115032680586E+03; Pars: -2.012027E-01, 4.681804E-01, 1.860005E-01
, 1.947547E+00, -9.462034E-02"
## [1] "Llh: -1.03113157278026E+03; Pars: -2.789450E-01, 4.789362E-01, 1.851952E-01

```

```

, 1.944725E+00, -9.153988E-02"
## [1] "Llh: -1.03123574919484E+03; Pars: -2.763466E-01, 4.969787E-01, 1.796800E-01
, 1.955250E+00, -8.563066E-02"
## [1] "Llh: -1.03118350009008E+03; Pars: -2.219300E-01, 4.812922E-01, 1.826189E-01
, 1.952754E+00, -9.036352E-02"
## [1] "Llh: -1.03119372544245E+03; Pars: -3.353259E-01, 4.870096E-01, 1.939955E-01
, 1.961410E+00, -9.637104E-02"
## [1] "Llh: -1.03116090254519E+03; Pars: -2.672931E-01, 4.790324E-01, 1.901694E-01
, 1.956803E+00, -9.548669E-02"
## [1] "Llh: -1.03117357894254E+03; Pars: -3.380325E-01, 4.850816E-01, 1.961656E-01
, 1.959567E+00, -9.340411E-02"
## [1] "Llh: -1.03115260358522E+03; Pars: -2.834182E-01, 4.796423E-01, 1.922293E-01
, 1.956737E+00, -9.398081E-02"
## [1] "Llh: -1.03116511730646E+03; Pars: -2.468652E-01, 5.031482E-01, 1.951523E-01
, 1.944608E+00, -1.002057E-01"
## [1] "Llh: -1.03115268958146E+03; Pars: -2.430257E-01, 4.909551E-01, 1.924938E-01
, 1.948791E+00, -9.774385E-02"
## [1] "Llh: -1.03112086933800E+03; Pars: -2.648806E-01, 4.806399E-01, 2.010017E-01
, 1.951626E+00, -1.031526E-01"
## [1] "Llh: -1.03110938674579E+03; Pars: -2.863560E-01, 4.803141E-01, 2.101931E-01
, 1.951063E+00, -1.095472E-01"
## [1] "Llh: -1.03116983650102E+03; Pars: -3.992708E-01, 4.871706E-01, 1.891487E-01
, 1.949316E+00, -9.028023E-02"
## [1] "Llh: -1.03114190263513E+03; Pars: -3.355392E-01, 4.844548E-01, 1.916024E-01
, 1.950467E+00, -9.396996E-02"
## [1] "Llh: -1.03110590877837E+03; Pars: -3.036205E-01, 4.866775E-01, 1.985161E-01
, 1.943924E+00, -9.922597E-02"
## [1] "Llh: -1.03109040295511E+03; Pars: -3.217842E-01, 4.905457E-01, 2.026895E-01
, 1.937516E+00, -1.010956E-01"
## [1] "Llh: -1.03110650792241E+03; Pars: -3.593913E-01, 4.747002E-01, 2.002700E-01
, 1.947390E+00, -9.830952E-02"
## [1] "Llh: -1.03110841832833E+03; Pars: -3.302999E-01, 4.787128E-01, 1.983260E-01
, 1.947740E+00, -9.816810E-02"
## [1] "Llh: -1.03108318883614E+03; Pars: -3.493881E-01, 4.838877E-01, 2.037507E-01
, 1.935770E+00, -1.038040E-01"
## [1] "Llh: -1.03108027528041E+03; Pars: -3.823730E-01, 4.860245E-01, 2.095114E-01
, 1.925371E+00, -1.087157E-01"
## [1] "Llh: -1.03106384035895E+03; Pars: -3.160006E-01, 4.797012E-01, 2.115413E-01
, 1.931961E+00, -1.097132E-01"
## [1] "Llh: -1.03106393643255E+03; Pars: -3.062313E-01, 4.773419E-01, 2.215107E-01
, 1.922774E+00, -1.175848E-01"
## [1] "Llh: -1.03110930693027E+03; Pars: -3.874170E-01, 4.855384E-01, 2.284869E-01
, 1.932568E+00, -1.194126E-01"
## [1] "Llh: -1.03108519027129E+03; Pars: -3.602990E-01, 4.838794E-01, 2.176640E-01
, 1.935600E+00, -1.124444E-01"
## [1] "Llh: -1.03109293979654E+03; Pars: -4.095833E-01, 4.855798E-01, 2.064774E-01
, 1.920169E+00, -1.025642E-01"
## [1] "Llh: -1.03108009807780E+03; Pars: -3.787764E-01, 4.842580E-01, 2.074063E-01
, 1.927846E+00, -1.043099E-01"
## [1] "Llh: -1.03106853757528E+03; Pars: -3.443020E-01, 4.952557E-01, 2.192550E-01

```

```

, 1.916044E+00, -1.162020E-01"
## [1] "Llh: -1.03106802001422E+03; Pars: -3.480743E-01, 4.900348E-01, 2.145088E-01
, 1.923833E+00, -1.117289E-01"
## [1] "Llh: -1.03109091185083E+03; Pars: -3.924252E-01, 4.790584E-01, 2.215632E-01
, 1.920357E+00, -1.176692E-01"
## [1] "Llh: -1.03107668005473E+03; Pars: -3.394444E-01, 4.876483E-01, 2.074079E-01
, 1.933212E+00, -1.052390E-01"
## [1] "Llh: -1.03107068564113E+03; Pars: -3.455685E-01, 4.871679E-01, 2.024863E-01
, 1.921309E+00, -1.034383E-01"
## [1] "Llh: -1.03106908566209E+03; Pars: -3.492511E-01, 4.863437E-01, 2.062807E-01
, 1.924872E+00, -1.056898E-01"
## [1] "Llh: -1.03106444500152E+03; Pars: -3.102458E-01, 4.851451E-01, 2.093466E-01
, 1.931315E+00, -1.059567E-01"
## [1] "Llh: -1.03106586520063E+03; Pars: -3.282776E-01, 4.853648E-01, 2.093878E-01
, 1.929828E+00, -1.066464E-01"
## [1] "Llh: -1.03106140085463E+03; Pars: -2.864300E-01, 4.872714E-01, 2.122278E-01
, 1.930224E+00, -1.110211E-01"
## [1] "Llh: -1.03106660278510E+03; Pars: -2.402568E-01, 4.887851E-01, 2.146385E-01
, 1.931413E+00, -1.143767E-01"
## [1] "Llh: -1.03105562980121E+03; Pars: -3.045563E-01, 4.837341E-01, 2.141541E-01
, 1.923676E+00, -1.124048E-01"
## [1] "Llh: -1.03105501427958E+03; Pars: -2.871123E-01, 4.817888E-01, 2.175272E-01
, 1.918925E+00, -1.159877E-01"
## [1] "Llh: -1.03106063023075E+03; Pars: -2.698941E-01, 4.832096E-01, 2.197799E-01
, 1.929621E+00, -1.160732E-01"
## [1] "Llh: -1.03105818721749E+03; Pars: -2.897333E-01, 4.839912E-01, 2.164051E-01
, 1.928433E+00, -1.134774E-01"
## [1] "Llh: -1.03106172064251E+03; Pars: -2.477345E-01, 4.771952E-01, 2.123104E-01
, 1.932508E+00, -1.107335E-01"
## [1] "Llh: -1.03105800125493E+03; Pars: -2.728194E-01, 4.803732E-01, 2.128600E-01
, 1.930336E+00, -1.109824E-01"
## [1] "Llh: -1.03105627241164E+03; Pars: -2.705925E-01, 4.801028E-01, 2.188780E-01
, 1.924630E+00, -1.185160E-01"
## [1] "Llh: -1.03105565065071E+03; Pars: -2.805058E-01, 4.813584E-01, 2.164951E-01
, 1.926299E+00, -1.153762E-01"
## [1] "Llh: -1.03105259540750E+03; Pars: -2.506398E-01, 4.862216E-01, 2.186648E-01
, 1.921730E+00, -1.170247E-01"
## [1] "Llh: -1.03105523187406E+03; Pars: -2.179593E-01, 4.895150E-01, 2.222266E-01
, 1.916635E+00, -1.206805E-01"
## [1] "Llh: -1.03105806507892E+03; Pars: -2.658942E-01, 4.782549E-01, 2.205531E-01
, 1.920070E+00, -1.181183E-01"
## [1] "Llh: -1.03105473203052E+03; Pars: -2.710282E-01, 4.804933E-01, 2.184718E-01
, 1.922603E+00, -1.163440E-01"
## [1] "Llh: -1.03105418621938E+03; Pars: -2.551089E-01, 4.801012E-01, 2.172024E-01
, 1.919527E+00, -1.168086E-01"
## [1] "Llh: -1.03105331420853E+03; Pars: -2.637650E-01, 4.810708E-01, 2.170031E-01
, 1.921750E+00, -1.159758E-01"
## [1] "Llh: -1.03105762254407E+03; Pars: -2.684010E-01, 4.839980E-01, 2.224048E-01
, 1.914218E+00, -1.213010E-01"
## [1] "Llh: -1.03105438327466E+03; Pars: -2.695056E-01, 4.830892E-01, 2.200186E-01

```

```

, 1.918235E+00, -1.187213E-01"
## [1] "Llh: -1.03105430799820E+03; Pars: -2.563145E-01, 4.837013E-01, 2.201791E-01
, 1.915013E+00, -1.182452E-01"
## [1] "Llh: -1.03105333026723E+03; Pars: -2.623623E-01, 4.831145E-01, 2.192581E-01
, 1.917828E+00, -1.175280E-01"
## [1] "Llh: -1.03105415996946E+03; Pars: -2.398081E-01, 4.838006E-01, 2.198394E-01
, 1.921932E+00, -1.182498E-01"
## [1] "Llh: -1.03105322250029E+03; Pars: -2.516341E-01, 4.832969E-01, 2.192613E-01
, 1.921180E+00, -1.176843E-01"
## [1] "Llh: -1.03105181914266E+03; Pars: -2.481345E-01, 4.862354E-01, 2.192106E-01
, 1.917688E+00, -1.184297E-01"
## [1] "Llh: -1.03105187537150E+03; Pars: -2.366877E-01, 4.891321E-01, 2.195800E-01
, 1.915235E+00, -1.194725E-01"
## [1] "Llh: -1.03105232747293E+03; Pars: -2.411087E-01, 4.848799E-01, 2.173406E-01
, 1.921835E+00, -1.159356E-01"
## [1] "Llh: -1.03105208428707E+03; Pars: -2.482079E-01, 4.844316E-01, 2.180101E-01
, 1.920935E+00, -1.166321E-01"
## [1] "Llh: -1.03105367233089E+03; Pars: -2.425902E-01, 4.853828E-01, 2.176019E-01
, 1.923488E+00, -1.167706E-01"
## [1] "Llh: -1.03105248982796E+03; Pars: -2.574193E-01, 4.836806E-01, 2.188440E-01
, 1.919242E+00, -1.173386E-01"
## [1] "Llh: -1.03105282906441E+03; Pars: -2.386493E-01, 4.885010E-01, 2.205932E-01
, 1.918560E+00, -1.188679E-01"
## [1] "Llh: -1.03105228887463E+03; Pars: -2.449282E-01, 4.866327E-01, 2.196957E-01
, 1.919357E+00, -1.181449E-01"
## [1] "Llh: -1.03105114229449E+03; Pars: -2.480978E-01, 4.875906E-01, 2.185088E-01
, 1.918400E+00, -1.173437E-01"
## [1] "Llh: -1.03105065051945E+03; Pars: -2.463296E-01, 4.897517E-01, 2.181325E-01
, 1.917012E+00, -1.171734E-01"
## [1] "Llh: -1.03105172132692E+03; Pars: -2.473680E-01, 4.860621E-01, 2.188923E-01
, 1.915966E+00, -1.180628E-01"
## [1] "Llh: -1.03105150946365E+03; Pars: -2.481860E-01, 4.861020E-01, 2.188355E-01
, 1.917406E+00, -1.178033E-01"
## [1] "Llh: -1.03105157278950E+03; Pars: -2.368952E-01, 4.895926E-01, 2.187097E-01
, 1.917716E+00, -1.179347E-01"
## [1] "Llh: -1.03105137142981E+03; Pars: -2.420262E-01, 4.881078E-01, 2.187433E-01
, 1.918097E+00, -1.177857E-01"
## [1] "Llh: -1.03105062652531E+03; Pars: -2.482255E-01, 4.872120E-01, 2.174771E-01
, 1.917097E+00, -1.169847E-01"
## [1] "Llh: -1.03105032491908E+03; Pars: -2.498742E-01, 4.875018E-01, 2.163677E-01
, 1.915969E+00, -1.164047E-01"
## [1] "Llh: -1.03105097424610E+03; Pars: -2.456123E-01, 4.906641E-01, 2.185057E-01
, 1.913541E+00, -1.184066E-01"
## [1] "Llh: -1.03105078932077E+03; Pars: -2.462612E-01, 4.890985E-01, 2.183818E-01
, 1.915386E+00, -1.179630E-01"
## [1] "Llh: -1.03105004588425E+03; Pars: -2.449363E-01, 4.899933E-01, 2.169737E-01
, 1.915860E+00, -1.164223E-01"
## [1] "Llh: -1.03104980188830E+03; Pars: -2.433372E-01, 4.918831E-01, 2.158553E-01
, 1.914947E+00, -1.154187E-01"
## [1] "Llh: -1.03105021803292E+03; Pars: -2.429454E-01, 4.924511E-01, 2.161568E-01

```

```

, 1.915159E+00, -1.160949E-01"
## [1] "Llh: -1.03105013622572E+03; Pars: -2.442555E-01, 4.908561E-01, 2.168264E-01
, 1.915720E+00, -1.165220E-01"
## [1] "Llh: -1.03104985832892E+03; Pars: -2.499969E-01, 4.915300E-01, 2.154822E-01
, 1.913519E+00, -1.156070E-01"
## [1] "Llh: -1.03104987629506E+03; Pars: -2.480042E-01, 4.906723E-01, 2.162975E-01
, 1.914662E+00, -1.161517E-01"
## [1] "Llh: -1.03104961311395E+03; Pars: -2.472562E-01, 4.915085E-01, 2.146838E-01
, 1.915479E+00, -1.144874E-01"
## [1] "Llh: -1.03104987897727E+03; Pars: -2.477537E-01, 4.927179E-01, 2.128349E-01
, 1.915526E+00, -1.127495E-01"
## [1] "Llh: -1.03104992197786E+03; Pars: -2.475584E-01, 4.915565E-01, 2.135537E-01
, 1.913243E+00, -1.142025E-01"
## [1] "Llh: -1.03104970206391E+03; Pars: -2.472512E-01, 4.911046E-01, 2.146984E-01
, 1.914185E+00, -1.149452E-01"
## [1] "Llh: -1.03105045645928E+03; Pars: -2.429646E-01, 4.952816E-01, 2.146507E-01
, 1.913572E+00, -1.143874E-01"
## [1] "Llh: -1.03104985135448E+03; Pars: -2.481468E-01, 4.894353E-01, 2.159385E-01
, 1.915369E+00, -1.159004E-01"
## [1] "Llh: -1.03104963599715E+03; Pars: -2.501397E-01, 4.913271E-01, 2.138369E-01
, 1.913680E+00, -1.140214E-01"
## [1] "Llh: -1.03104959695550E+03; Pars: -2.486687E-01, 4.912093E-01, 2.145843E-01
, 1.914190E+00, -1.146466E-01"
## [1] "Llh: -1.03104964620623E+03; Pars: -2.438672E-01, 4.905253E-01, 2.148219E-01
, 1.916150E+00, -1.145522E-01"
## [1] "Llh: -1.03104960508639E+03; Pars: -2.453996E-01, 4.907763E-01, 2.149870E-01
, 1.915492E+00, -1.148159E-01"
## [1] "Llh: -1.03104978472320E+03; Pars: -2.446184E-01, 4.931643E-01, 2.139850E-01
, 1.914348E+00, -1.138251E-01"
## [1] "Llh: -1.03104964352459E+03; Pars: -2.455005E-01, 4.922294E-01, 2.144734E-01
, 1.914603E+00, -1.143439E-01"
## [1] "Llh: -1.03104964372959E+03; Pars: -2.502932E-01, 4.908482E-01, 2.135155E-01
, 1.914632E+00, -1.138769E-01"
## [1] "Llh: -1.03104958313315E+03; Pars: -2.485542E-01, 4.911067E-01, 2.141004E-01
, 1.914711E+00, -1.142624E-01"
## [1] "Llh: -1.03104956090038E+03; Pars: -2.469005E-01, 4.916271E-01, 2.144331E-01
, 1.915605E+00, -1.140773E-01"
## [1] "Llh: -1.03104967425284E+03; Pars: -2.467251E-01, 4.918885E-01, 2.143005E-01
, 1.916316E+00, -1.136433E-01"
## [1] "Llh: -1.03104953514612E+03; Pars: -2.492112E-01, 4.902636E-01, 2.146421E-01
, 1.915588E+00, -1.145719E-01"
## [1] "Llh: -1.03104959884264E+03; Pars: -2.510665E-01, 4.892836E-01, 2.147264E-01
, 1.916080E+00, -1.146858E-01"
## [1] "Llh: -1.03104953967380E+03; Pars: -2.482375E-01, 4.904848E-01, 2.144149E-01
, 1.914755E+00, -1.144623E-01"
## [1] "Llh: -1.03104952680351E+03; Pars: -2.479922E-01, 4.907405E-01, 2.144821E-01
, 1.914936E+00, -1.144685E-01"
## [1] "Llh: -1.03104954387986E+03; Pars: -2.511311E-01, 4.912022E-01, 2.139098E-01
, 1.914520E+00, -1.139947E-01"
## [1] "Llh: -1.03104952248099E+03; Pars: -2.496982E-01, 4.910957E-01, 2.141791E-01

```

```

, 1.914763E+00, -1.142000E-01"
## [1] "Llh: -1.03104953456481E+03; Pars: -2.482738E-01, 4.907239E-01, 2.141505E-01
, 1.916052E+00, -1.139854E-01"
## [1] "Llh: -1.03104951342252E+03; Pars: -2.483725E-01, 4.908452E-01, 2.142589E-01
, 1.915586E+00, -1.141507E-01"
## [1] "Llh: -1.03104948584300E+03; Pars: -2.483156E-01, 4.907218E-01, 2.146977E-01
, 1.915880E+00, -1.143250E-01"
## [1] "Llh: -1.03104952383057E+03; Pars: -2.481963E-01, 4.905294E-01, 2.149964E-01
, 1.916465E+00, -1.143563E-01"
## [1] "Llh: -1.03104960276434E+03; Pars: -2.505354E-01, 4.898411E-01, 2.144709E-01
, 1.915096E+00, -1.146092E-01"
## [1] "Llh: -1.03104950961247E+03; Pars: -2.478092E-01, 4.911800E-01, 2.144426E-01
, 1.915478E+00, -1.142102E-01"
## [1] "Llh: -1.03104949518709E+03; Pars: -2.476639E-01, 4.915705E-01, 2.141821E-01
, 1.915069E+00, -1.139699E-01"
## [1] "Llh: -1.03104948961674E+03; Pars: -2.480507E-01, 4.912434E-01, 2.142971E-01
, 1.915199E+00, -1.141204E-01"
## [1] "Llh: -1.03104951297098E+03; Pars: -2.489064E-01, 4.912940E-01, 2.142680E-01
, 1.915827E+00, -1.139340E-01"
## [1] "Llh: -1.03104949471948E+03; Pars: -2.486778E-01, 4.911556E-01, 2.143216E-01
, 1.915604E+00, -1.140677E-01"
## [1] "Llh: -1.03104957759242E+03; Pars: -2.467921E-01, 4.909626E-01, 2.146280E-01
, 1.916336E+00, -1.141496E-01"
## [1] "Llh: -1.03104949392785E+03; Pars: -2.489717E-01, 4.910624E-01, 2.142913E-01
, 1.915156E+00, -1.141874E-01"
## [1] "Llh: -1.03104947029399E+03; Pars: -2.483575E-01, 4.913001E-01, 2.145612E-01
, 1.915341E+00, -1.142136E-01"
## [1] "Llh: -1.03104946035221E+03; Pars: -2.483500E-01, 4.915278E-01, 2.147123E-01
, 1.915218E+00, -1.142450E-01"
## [1] "Llh: -1.03104944560994E+03; Pars: -2.491371E-01, 4.911043E-01, 2.144855E-01
, 1.915345E+00, -1.141679E-01"
## [1] "Llh: -1.03104941890761E+03; Pars: -2.498011E-01, 4.910664E-01, 2.145069E-01
, 1.915278E+00, -1.141468E-01"
## [1] "Llh: -1.03104944036241E+03; Pars: -2.487178E-01, 4.910931E-01, 2.146806E-01
, 1.915089E+00, -1.143422E-01"
## [1] "Llh: -1.03104944878469E+03; Pars: -2.487078E-01, 4.911087E-01, 2.145908E-01
, 1.915218E+00, -1.142736E-01"
## [1] "Llh: -1.03104943369017E+03; Pars: -2.483224E-01, 4.911984E-01, 2.148665E-01
, 1.915510E+00, -1.142843E-01"
## [1] "Llh: -1.03104943909533E+03; Pars: -2.484847E-01, 4.911644E-01, 2.147227E-01
, 1.915421E+00, -1.142601E-01"
## [1] "Llh: -1.03104942312914E+03; Pars: -2.493520E-01, 4.909994E-01, 2.150885E-01
, 1.915591E+00, -1.144169E-01"
## [1] "Llh: -1.03104942768599E+03; Pars: -2.490267E-01, 4.910604E-01, 2.148907E-01
, 1.915493E+00, -1.143428E-01"
## [1] "Llh: -1.03104940005242E+03; Pars: -2.495017E-01, 4.916326E-01, 2.148442E-01
, 1.914794E+00, -1.142491E-01"
## [1] "Llh: -1.03104940316367E+03; Pars: -2.500948E-01, 4.920887E-01, 2.149175E-01
, 1.914252E+00, -1.142112E-01"
## [1] "Llh: -1.03104938288449E+03; Pars: -2.499280E-01, 4.908683E-01, 2.148824E-01

```

```

, 1.915287E+00, -1.143307E-01"
## [1] "Llh: -1.03104936629743E+03; Pars: -2.507171E-01, 4.905390E-01, 2.149674E-01
, 1.915321E+00, -1.143736E-01"
## [1] "Llh: -1.03104936973569E+03; Pars: -2.503599E-01, 4.910811E-01, 2.150289E-01
, 1.915509E+00, -1.142461E-01"
## [1] "Llh: -1.03104938060956E+03; Pars: -2.499494E-01, 4.910841E-01, 2.149418E-01
, 1.915404E+00, -1.142701E-01"
## [1] "Llh: -1.03104936005679E+03; Pars: -2.515703E-01, 4.909288E-01, 2.149079E-01
, 1.915088E+00, -1.142887E-01"
## [1] "Llh: -1.03104936214713E+03; Pars: -2.531943E-01, 4.907940E-01, 2.149285E-01
, 1.914877E+00, -1.142908E-01"
## [1] "Llh: -1.03104935462907E+03; Pars: -2.514280E-01, 4.910995E-01, 2.146136E-01
, 1.914805E+00, -1.141048E-01"
## [1] "Llh: -1.03104937121252E+03; Pars: -2.524660E-01, 4.911495E-01, 2.143761E-01
, 1.914413E+00, -1.139487E-01"
## [1] "Llh: -1.03104933260641E+03; Pars: -2.516297E-01, 4.910457E-01, 2.152379E-01
, 1.914929E+00, -1.143581E-01"
## [1] "Llh: -1.03104933962343E+03; Pars: -2.525441E-01, 4.910353E-01, 2.156033E-01
, 1.914754E+00, -1.144638E-01"
## [1] "Llh: -1.03104933786075E+03; Pars: -2.527803E-01, 4.902458E-01, 2.150580E-01
, 1.915467E+00, -1.142994E-01"
## [1] "Llh: -1.03104933657564E+03; Pars: -2.519607E-01, 4.905922E-01, 2.150046E-01
, 1.915299E+00, -1.142868E-01"
## [1] "Llh: -1.03104937679468E+03; Pars: -2.525624E-01, 4.906010E-01, 2.148637E-01
, 1.914668E+00, -1.143187E-01"
## [1] "Llh: -1.03104934942916E+03; Pars: -2.509105E-01, 4.909610E-01, 2.149876E-01
, 1.915299E+00, -1.142643E-01"
## [1] "Llh: -1.03104932943524E+03; Pars: -2.522826E-01, 4.913121E-01, 2.149331E-01
, 1.914846E+00, -1.141475E-01"
## [1] "Llh: -1.03104933318930E+03; Pars: -2.530654E-01, 4.916991E-01, 2.149160E-01
, 1.914609E+00, -1.140344E-01"
## [1] "Llh: -1.03104930867779E+03; Pars: -2.517143E-01, 4.910753E-01, 2.150028E-01
, 1.914983E+00, -1.141759E-01"
## [1] "Llh: -1.03104928620554E+03; Pars: -2.517863E-01, 4.911485E-01, 2.150503E-01
, 1.914931E+00, -1.141196E-01"
## [1] "Llh: -1.03104933184164E+03; Pars: -2.519999E-01, 4.909242E-01, 2.154718E-01
, 1.915316E+00, -1.143657E-01"
## [1] "Llh: -1.03104932189163E+03; Pars: -2.518569E-01, 4.909680E-01, 2.152572E-01
, 1.915188E+00, -1.143005E-01"
## [1] "Llh: -1.03104930201370E+03; Pars: -2.528960E-01, 4.910655E-01, 2.152057E-01
, 1.914778E+00, -1.142207E-01"
## [1] "Llh: -1.03104930761685E+03; Pars: -2.523996E-01, 4.910394E-01, 2.151512E-01
, 1.914908E+00, -1.142316E-01"
## [1] "Llh: -1.03104931121732E+03; Pars: -2.522199E-01, 4.916243E-01, 2.152691E-01
, 1.914571E+00, -1.141717E-01"
## [1] "Llh: -1.03104930803468E+03; Pars: -2.521551E-01, 4.913660E-01, 2.152030E-01
, 1.914753E+00, -1.142005E-01"
## [1] "Llh: -1.03104928368747E+03; Pars: -2.527610E-01, 4.912984E-01, 2.150219E-01
, 1.914870E+00, -1.140374E-01"
## [1] "Llh: -1.03104926537624E+03; Pars: -2.533267E-01, 4.914248E-01, 2.149139E-01

```

```

, 1.914840E+00, -1.138770E-01"
## [1] "Llh: -1.03104926733933E+03; Pars: -2.525258E-01, 4.910770E-01, 2.153189E-01
, 1.914950E+00, -1.141398E-01"
## [1] "Llh: -1.03104927870582E+03; Pars: -2.524650E-01, 4.911358E-01, 2.152225E-01
, 1.914924E+00, -1.141417E-01"
## [1] "Llh: -1.03104925815230E+03; Pars: -2.532190E-01, 4.914648E-01, 2.150195E-01
, 1.914513E+00, -1.139226E-01"
## [1] "Llh: -1.03104924945611E+03; Pars: -2.539000E-01, 4.917134E-01, 2.149006E-01
, 1.914175E+00, -1.137336E-01"
## [1] "Llh: -1.03104922877071E+03; Pars: -2.536187E-01, 4.912055E-01, 2.149528E-01
, 1.914717E+00, -1.138358E-01"
## [1] "Llh: -1.03104919677343E+03; Pars: -2.543505E-01, 4.911253E-01, 2.148277E-01
, 1.914699E+00, -1.136535E-01"
## [1] "Llh: -1.03104919751406E+03; Pars: -2.534597E-01, 4.915301E-01, 2.147989E-01
, 1.914660E+00, -1.135887E-01"
## [1] "Llh: -1.03104921936299E+03; Pars: -2.533188E-01, 4.914139E-01, 2.149006E-01
, 1.914689E+00, -1.137467E-01"
## [1] "Llh: -1.03104919673309E+03; Pars: -2.552388E-01, 4.915997E-01, 2.148537E-01
, 1.914399E+00, -1.134775E-01"
## [1] "Llh: -1.03104919337926E+03; Pars: -2.569651E-01, 4.918255E-01, 2.147554E-01
, 1.914133E+00, -1.131564E-01"
## [1] "Llh: -1.03104921555445E+03; Pars: -2.562751E-01, 4.919709E-01, 2.143596E-01
, 1.914053E+00, -1.130638E-01"
## [1] "Llh: -1.03104920422703E+03; Pars: -2.553377E-01, 4.917473E-01, 2.145995E-01
, 1.914277E+00, -1.133328E-01"
## [1] "Llh: -1.03104917535177E+03; Pars: -2.562786E-01, 4.917518E-01, 2.146389E-01
, 1.913937E+00, -1.131090E-01"
## [1] "Llh: -1.03104919423005E+03; Pars: -2.577545E-01, 4.919153E-01, 2.145014E-01
, 1.913486E+00, -1.127250E-01"
## [1] "Llh: -1.03104912955469E+03; Pars: -2.566567E-01, 4.914785E-01, 2.145475E-01
, 1.914508E+00, -1.130025E-01"
## [1] "Llh: -1.03104909228417E+03; Pars: -2.580350E-01, 4.913611E-01, 2.143709E-01
, 1.914674E+00, -1.126370E-01"
## [1] "Llh: -1.03104911650500E+03; Pars: -2.562979E-01, 4.912902E-01, 2.147572E-01
, 1.914564E+00, -1.131250E-01"
## [1] "Llh: -1.03104913467495E+03; Pars: -2.560578E-01, 4.914044E-01, 2.147178E-01
, 1.914492E+00, -1.131770E-01"
## [1] "Llh: -1.03104915447922E+03; Pars: -2.593111E-01, 4.914113E-01, 2.145412E-01
, 1.914143E+00, -1.126837E-01"
## [1] "Llh: -1.03104914103439E+03; Pars: -2.578483E-01, 4.914410E-01, 2.146056E-01
, 1.914272E+00, -1.129099E-01"
## [1] "Llh: -1.03104916087291E+03; Pars: -2.598194E-01, 4.919427E-01, 2.144235E-01
, 1.913933E+00, -1.123215E-01"
## [1] "Llh: -1.03104913923533E+03; Pars: -2.584522E-01, 4.917383E-01, 2.145246E-01
, 1.914124E+00, -1.126545E-01"
## [1] "Llh: -1.03104907026807E+03; Pars: -2.577997E-01, 4.912076E-01, 2.144035E-01
, 1.914496E+00, -1.126178E-01"
## [1] "Llh: -1.03104902501743E+03; Pars: -2.582169E-01, 4.908989E-01, 2.142276E-01
, 1.914678E+00, -1.123484E-01"
## [1] "Llh: -1.03104905071061E+03; Pars: -2.592615E-01, 4.909402E-01, 2.143555E-01

```

```

, 1.914988E+00, -1.123609E-01"
## [1] "Llh: -1.03104906880629E+03; Pars: -2.585158E-01, 4.911429E-01, 2.144263E-01
, 1.914725E+00, -1.125479E-01"
## [1] "Llh: -1.03104902434370E+03; Pars: -2.582571E-01, 4.910503E-01, 2.142887E-01
, 1.914939E+00, -1.123404E-01"
## [1] "Llh: -1.03104898668807E+03; Pars: -2.584616E-01, 4.908551E-01, 2.141303E-01
, 1.915272E+00, -1.120556E-01"
## [1] "Llh: -1.03104900068640E+03; Pars: -2.576570E-01, 4.904008E-01, 2.142120E-01
, 1.915546E+00, -1.123563E-01"
## [1] "Llh: -1.03104901650539E+03; Pars: -2.578558E-01, 4.907348E-01, 2.142902E-01
, 1.915191E+00, -1.124309E-01"
## [1] "Llh: -1.03104898926413E+03; Pars: -2.603550E-01, 4.904924E-01, 2.137613E-01
, 1.915499E+00, -1.115783E-01"
## [1] "Llh: -1.03104899834577E+03; Pars: -2.593407E-01, 4.906917E-01, 2.140103E-01
, 1.915265E+00, -1.119650E-01"
## [1] "Llh: -1.03104895559020E+03; Pars: -2.595458E-01, 4.900746E-01, 2.139037E-01
, 1.915719E+00, -1.116428E-01"
## [1] "Llh: -1.03104895663160E+03; Pars: -2.603012E-01, 4.894326E-01, 2.136701E-01
, 1.916242E+00, -1.111458E-01"
## [1] "Llh: -1.03104893405959E+03; Pars: -2.584330E-01, 4.901486E-01, 2.137385E-01
, 1.915698E+00, -1.116317E-01"
## [1] "Llh: -1.03104891298580E+03; Pars: -2.580187E-01, 4.897534E-01, 2.134300E-01
, 1.916052E+00, -1.112671E-01"
## [1] "Llh: -1.03104897750370E+03; Pars: -2.593983E-01, 4.897320E-01, 2.135474E-01
, 1.916558E+00, -1.112116E-01"
## [1] "Llh: -1.03104895598702E+03; Pars: -2.591030E-01, 4.900235E-01, 2.137174E-01
, 1.916088E+00, -1.114958E-01"
## [1] "Llh: -1.03104893932434E+03; Pars: -2.605366E-01, 4.900785E-01, 2.133651E-01
, 1.915906E+00, -1.108596E-01"
## [1] "Llh: -1.03104893918261E+03; Pars: -2.598167E-01, 4.901591E-01, 2.135768E-01
, 1.915816E+00, -1.112337E-01"
## [1] "Llh: -1.03104890907236E+03; Pars: -2.576233E-01, 4.898538E-01, 2.137420E-01
, 1.916080E+00, -1.114997E-01"
## [1] "Llh: -1.03104889644450E+03; Pars: -2.562575E-01, 4.895349E-01, 2.137324E-01
, 1.916370E+00, -1.114604E-01"
## [1] "Llh: -1.03104895117604E+03; Pars: -2.586351E-01, 4.889647E-01, 2.132139E-01
, 1.916747E+00, -1.107843E-01"
## [1] "Llh: -1.03104892593664E+03; Pars: -2.585917E-01, 4.894366E-01, 2.134430E-01
, 1.916378E+00, -1.111022E-01"
## [1] "Llh: -1.03104888607814E+03; Pars: -2.577892E-01, 4.895599E-01, 2.135170E-01
, 1.916046E+00, -1.111867E-01"
## [1] "Llh: -1.03104886524993E+03; Pars: -2.571323E-01, 4.893283E-01, 2.134168E-01
, 1.916026E+00, -1.110321E-01"
## [1] "Llh: -1.03104888862828E+03; Pars: -2.563810E-01, 4.892105E-01, 2.131359E-01
, 1.916538E+00, -1.107953E-01"
## [1] "Llh: -1.03104888801290E+03; Pars: -2.571722E-01, 4.894264E-01, 2.133278E-01
, 1.916333E+00, -1.110072E-01"
## [1] "Llh: -1.03104890385428E+03; Pars: -2.550523E-01, 4.888336E-01, 2.133632E-01
, 1.916648E+00, -1.111138E-01"
## [1] "Llh: -1.03104889099985E+03; Pars: -2.562434E-01, 4.891646E-01, 2.134166E-01

```

```

, 1.916440E+00, -1.111438E-01"
## [1] "Llh: -1.03104885463597E+03; Pars: -2.553380E-01, 4.894463E-01, 2.134865E-01
, 1.916111E+00, -1.112621E-01"
## [1] "Llh: -1.03104883408968E+03; Pars: -2.537111E-01, 4.894511E-01, 2.135082E-01
, 1.915977E+00, -1.113420E-01"
## [1] "Llh: -1.03104885048286E+03; Pars: -2.541879E-01, 4.890090E-01, 2.135307E-01
, 1.916406E+00, -1.111272E-01"
## [1] "Llh: -1.03104885606926E+03; Pars: -2.551456E-01, 4.891950E-01, 2.135055E-01
, 1.916318E+00, -1.111621E-01"
## [1] "Llh: -1.03104884696498E+03; Pars: -2.551213E-01, 4.890170E-01, 2.131476E-01
, 1.916102E+00, -1.108005E-01"
## [1] "Llh: -1.03104884983099E+03; Pars: -2.554053E-01, 4.891464E-01, 2.132938E-01
, 1.916169E+00, -1.109655E-01"
## [1] "Llh: -1.03104881461742E+03; Pars: -2.546865E-01, 4.893280E-01, 2.133558E-01
, 1.915898E+00, -1.109798E-01"
## [1] "Llh: -1.03104878849459E+03; Pars: -2.539081E-01, 4.894097E-01, 2.133254E-01
, 1.915627E+00, -1.108978E-01"
## [1] "Llh: -1.03104880685138E+03; Pars: -2.524521E-01, 4.890597E-01, 2.134436E-01
, 1.915722E+00, -1.110726E-01"
## [1] "Llh: -1.03104881351328E+03; Pars: -2.536321E-01, 4.891513E-01, 2.134147E-01
, 1.915875E+00, -1.110562E-01"
## [1] "Llh: -1.03104880900184E+03; Pars: -2.506198E-01, 4.890503E-01, 2.133655E-01
, 1.915908E+00, -1.110639E-01"
## [1] "Llh: -1.03104880855439E+03; Pars: -2.522479E-01, 4.891198E-01, 2.133783E-01
, 1.915937E+00, -1.110560E-01"
## [1] "Llh: -1.03104880253431E+03; Pars: -2.527883E-01, 4.894139E-01, 2.131906E-01
, 1.915340E+00, -1.109404E-01"
## [1] "Llh: -1.03104880299174E+03; Pars: -2.531382E-01, 4.893126E-01, 2.132756E-01
, 1.915607E+00, -1.109871E-01"
## [1] "Llh: -1.03104878176286E+03; Pars: -2.509217E-01, 4.895648E-01, 2.135909E-01
, 1.915339E+00, -1.113230E-01"
## [1] "Llh: -1.03104878692935E+03; Pars: -2.488220E-01, 4.898389E-01, 2.138125E-01
, 1.914958E+00, -1.115843E-01"
## [1] "Llh: -1.03104878603528E+03; Pars: -2.512162E-01, 4.891760E-01, 2.132633E-01
, 1.915209E+00, -1.107738E-01"
## [1] "Llh: -1.03104878465669E+03; Pars: -2.518399E-01, 4.892447E-01, 2.133246E-01
, 1.915401E+00, -1.109159E-01"
## [1] "Llh: -1.03104878636131E+03; Pars: -2.525161E-01, 4.895574E-01, 2.133718E-01
, 1.915035E+00, -1.110039E-01"
## [1] "Llh: -1.03104878497808E+03; Pars: -2.524490E-01, 4.894480E-01, 2.133734E-01
, 1.915260E+00, -1.110169E-01"
## [1] "Llh: -1.03104877449748E+03; Pars: -2.523107E-01, 4.897730E-01, 2.132783E-01
, 1.915065E+00, -1.109650E-01"
## [1] "Llh: -1.03104877688689E+03; Pars: -2.522401E-01, 4.901301E-01, 2.131956E-01
, 1.914737E+00, -1.109112E-01"
## [1] "Llh: -1.03104876118618E+03; Pars: -2.517835E-01, 4.895622E-01, 2.135664E-01
, 1.915337E+00, -1.111070E-01"
## [1] "Llh: -1.03104875082652E+03; Pars: -2.512811E-01, 4.896363E-01, 2.137543E-01
, 1.915335E+00, -1.111904E-01"
## [1] "Llh: -1.03104877488826E+03; Pars: -2.496129E-01, 4.896570E-01, 2.136031E-01

```

```

, 1.914934E+00, -1.112667E-01"
## [1] "Llh: -1.03104876987544E+03; Pars: -2.506867E-01, 4.895952E-01, 2.135337E-01
, 1.915107E+00, -1.111745E-01"
## [1] "Llh: -1.03104875692120E+03; Pars: -2.503670E-01, 4.896776E-01, 2.136193E-01
, 1.915239E+00, -1.112106E-01"
## [1] "Llh: -1.03104876138281E+03; Pars: -2.508875E-01, 4.896202E-01, 2.135578E-01
, 1.915244E+00, -1.111622E-01"
## [1] "Llh: -1.03104875911440E+03; Pars: -2.503871E-01, 4.900543E-01, 2.137860E-01
, 1.915033E+00, -1.114295E-01"
## [1] "Llh: -1.03104875877993E+03; Pars: -2.507503E-01, 4.898518E-01, 2.136707E-01
, 1.915125E+00, -1.113011E-01"
## [1] "Llh: -1.03104874016300E+03; Pars: -2.512366E-01, 4.898488E-01, 2.135516E-01
, 1.915009E+00, -1.110136E-01"
## [1] "Llh: -1.03104872709794E+03; Pars: -2.513941E-01, 4.899909E-01, 2.135320E-01
, 1.914844E+00, -1.108589E-01"
## [1] "Llh: -1.03104874863611E+03; Pars: -2.494809E-01, 4.897276E-01, 2.139657E-01
, 1.915195E+00, -1.113292E-01"
## [1] "Llh: -1.03104874585648E+03; Pars: -2.501884E-01, 4.897390E-01, 2.137938E-01
, 1.915162E+00, -1.112381E-01"
## [1] "Llh: -1.03104873031635E+03; Pars: -2.509056E-01, 4.899631E-01, 2.138144E-01
, 1.915175E+00, -1.111452E-01"
## [1] "Llh: -1.03104873623828E+03; Pars: -2.508509E-01, 4.898711E-01, 2.137442E-01
, 1.915158E+00, -1.111525E-01"
## [1] "Llh: -1.03104872505507E+03; Pars: -2.509043E-01, 4.897509E-01, 2.137349E-01
, 1.915177E+00, -1.109562E-01"
## [1] "Llh: -1.03104871767233E+03; Pars: -2.509813E-01, 4.897005E-01, 2.137670E-01
, 1.915203E+00, -1.107837E-01"
## [1] "Llh: -1.03104871833597E+03; Pars: -2.515332E-01, 4.899343E-01, 2.138453E-01
, 1.915049E+00, -1.108759E-01"
## [1] "Llh: -1.03104872230716E+03; Pars: -2.512416E-01, 4.898701E-01, 2.137888E-01
, 1.915097E+00, -1.109596E-01"
## [1] "Llh: -1.03104870669190E+03; Pars: -2.507199E-01, 4.900948E-01, 2.137467E-01
, 1.914839E+00, -1.107704E-01"
## [1] "Llh: -1.03104870123896E+03; Pars: -2.504393E-01, 4.903243E-01, 2.137429E-01
, 1.914591E+00, -1.105604E-01"
## [1] "Llh: -1.03104870382745E+03; Pars: -2.519130E-01, 4.902263E-01, 2.136868E-01
, 1.914783E+00, -1.104515E-01"
## [1] "Llh: -1.03104870518343E+03; Pars: -2.514818E-01, 4.901044E-01, 2.137136E-01
, 1.914878E+00, -1.106482E-01"
## [1] "Llh: -1.03104871092083E+03; Pars: -2.515987E-01, 4.901072E-01, 2.136153E-01
, 1.914613E+00, -1.102670E-01"
## [1] "Llh: -1.03104870592669E+03; Pars: -2.514254E-01, 4.900712E-01, 2.136650E-01
, 1.914754E+00, -1.104865E-01"
## [1] "Llh: -1.03104871720028E+03; Pars: -2.511227E-01, 4.901116E-01, 2.139508E-01
, 1.914908E+00, -1.104043E-01"
## [1] "Llh: -1.03104870718183E+03; Pars: -2.511906E-01, 4.900814E-01, 2.138461E-01
, 1.914892E+00, -1.105180E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104870692453E+03; Pars: -2.505034E-01, 4.903736E-01, 2.135341E-01

```

```

, 1.914435E+00, -1.099282E-01"
## [1] "Llh: -1.03104871920423E+03; Pars: -2.513447E-01, 4.906721E-01, 2.136645E-01
, 1.914260E+00, -1.101205E-01"
## [1] "Llh: -1.03104870554007E+03; Pars: -2.510721E-01, 4.899432E-01, 2.137414E-01
, 1.914968E+00, -1.106179E-01"
## [1] "Llh: -1.03104869400874E+03; Pars: -2.488466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869250311E+03; Pars: -2.498466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104872466124E+03; Pars: -2.498466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104887242760E+03; Pars: -2.498466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104877379982E+03; Pars: -2.498466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104886141900E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104902468901E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104878055223E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104875221350E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104871950521E+03; Pars: -2.528466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104870376378E+03; Pars: -2.518466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104873890710E+03; Pars: -2.518466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104888717058E+03; Pars: -2.518466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104878457358E+03; Pars: -2.518466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104885504735E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104905655684E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104879285205E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104876541758E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104869250311E+03; Pars: -2.498466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104870376378E+03; Pars: -2.518466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104872002371E+03; Pars: -2.508466E-01, 4.912086E-01, 2.136378E-01"

```

```

, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104887383626E+03; Pars: -2.508466E-01, 4.907176E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104877488813E+03; Pars: -2.508466E-01, 4.907176E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104892429897E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104896445682E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104878231549E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104875300907E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104872466124E+03; Pars: -2.498466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104873890710E+03; Pars: -2.518466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104878741290E+03; Pars: -2.508466E-01, 4.892477E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104890924292E+03; Pars: -2.508466E-01, 4.897372E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104880696570E+03; Pars: -2.508466E-01, 4.897372E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104881555667E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104914036097E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104881456774E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104878810442E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104887242760E+03; Pars: -2.498466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104888717058E+03; Pars: -2.518466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104887383626E+03; Pars: -2.508466E-01, 4.907176E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104890924292E+03; Pars: -2.508466E-01, 4.897372E-01, 2.146378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104931246544E+03; Pars: -2.508466E-01, 4.902271E-01, 2.156378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104905298934E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104919897146E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01

```

```

, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104910617549E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104879250707E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104877379982E+03; Pars: -2.498466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104878457358E+03; Pars: -2.518466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104877488813E+03; Pars: -2.508466E-01, 4.907176E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104880696570E+03; Pars: -2.508466E-01, 4.897372E-01, 2.126378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104911124372E+03; Pars: -2.508466E-01, 4.902271E-01, 2.116378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104891569454E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104913515463E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104871977300E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104897767756E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104886141900E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104885504735E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104892429897E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104881555667E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104905298934E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104891569454E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.916555E+00, -1.102441E-01"
## [1] "Llh: -1.03104950880987E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.918473E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104895168374E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.092441E-01"
## [1] "Llh: -1.03104890343210E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.112441E-01"
## [1] "Llh: -1.03104902468901E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104905655684E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104896445682E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01

```

```

, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104914036097E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104919897146E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104913515463E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.912726E+00, -1.102441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104987438054E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.910814E+00, -1.102441E-01"
## [1] "Llh: -1.03104911408579E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.092441E-01"
## [1] "Llh: -1.03104910667293E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.112441E-01"
## [1] "Llh: -1.03104878055223E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104879285205E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104878231549E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104881456774E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104910617549E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104871977300E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.092441E-01"
## [1] "Llh: -1.03104895168374E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.092441E-01"
## [1] "Llh: -1.03104911408579E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.912726E+00, -1.092441E-01"
## [1] "Llh: -1.03104901282092E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.082441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104875221350E+03; Pars: -2.498466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104876541758E+03; Pars: -2.518466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104875300907E+03; Pars: -2.508466E-01, 4.907176E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104878810442E+03; Pars: -2.508466E-01, 4.897372E-01, 2.136378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104879250707E+03; Pars: -2.508466E-01, 4.902271E-01, 2.146378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104897767756E+03; Pars: -2.508466E-01, 4.902271E-01, 2.126378E-01
, 1.914640E+00, -1.112441E-01"
## [1] "Llh: -1.03104890343210E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.916555E+00, -1.112441E-01"
## [1] "Llh: -1.03104910667293E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01

```

```

, 1.912726E+00, -1.112441E-01"
## [1] "Llh: -1.03104869968002E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.102441E-01"
## [1] "Llh: -1.03104895701569E+03; Pars: -2.508466E-01, 4.902271E-01, 2.136378E-01
, 1.914640E+00, -1.122441E-01"
## Currently fitting: asymmetric hyp
## [1] "Llh: -1.06810785299651E+03; Pars: 5.000000E-01, 1.733995E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.06815594184238E+03; Pars: 5.358867E-01, 1.733995E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.06947302405545E+03; Pars: 5.000000E-01, 2.427142E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.05476844744736E+03; Pars: 5.000000E-01, 1.733995E-01, 1.415787E+00
, 0.000000E+00"
## [1] "Llh: -1.07041433746216E+03; Pars: 5.000000E-01, 1.733995E-01, 1.320976E+00
, 6.931472E-02"
## [1] "Llh: -1.06019413894851E+03; Pars: 5.176325E-01, 2.080569E-01, 1.367560E+00
, -6.931472E-02"
## [1] "Llh: -1.06224436453896E+03; Pars: 5.131669E-01, 1.993925E-01, 1.355762E+00
, -3.465736E-02"
## [1] "Llh: -1.05778762768332E+03; Pars: 5.266805E-01, 1.214135E-01, 1.391465E+00
, -3.465736E-02"
## [1] "Llh: -1.05981472056818E+03; Pars: 5.198798E-01, 1.517387E-01, 1.373498E+00
, -2.599302E-02"
## [1] "Llh: -1.05286345420922E+03; Pars: 4.871709E-01, 1.647352E-01, 1.428107E+00
, -5.198604E-02"
## [1] "Llh: -1.04735643927967E+03; Pars: 4.644998E-01, 1.604030E-01, 1.484888E+00
, -7.797906E-02"
## [1] "Llh: -1.04512812371620E+03; Pars: 5.032597E-01, 1.582369E-01, 1.514120E+00
, -9.097557E-02"
## [1] "Llh: -1.03957264513980E+03; Pars: 5.048975E-01, 1.506556E-01, 1.621037E+00
, -1.364634E-01"
## [1] "Llh: -1.04098185837589E+03; Pars: 4.800998E-01, 9.487892E-02, 1.592326E+00
, -5.523517E-02"
## [1] "Llh: -1.04405321472522E+03; Pars: 4.892198E-01, 1.231734E-01, 1.532889E+00
, -5.875505E-02"
## [1] "Llh: -1.03665797119769E+03; Pars: 4.505032E-01, 1.682551E-01, 1.674118E+00
, -1.001814E-01"
## [1] "Llh: -1.03445796625831E+03; Pars: 4.166518E-01, 1.916758E-01, 1.836297E+00
, -1.329435E-01"
## [1] "Llh: -1.03736070757423E+03; Pars: 4.331884E-01, 1.254072E-01, 1.873841E+00
, -2.013105E-01"
## [1] "Llh: -1.03639336602756E+03; Pars: 4.490039E-01, 1.374053E-01, 1.747025E+00
, -1.509829E-01"
## [1] "Llh: -1.03731541686615E+03; Pars: 4.584516E-01, 1.269048E-01, 1.937937E+00
, -1.598334E-01"
## [1] "Llh: -1.03572353106758E+03; Pars: 4.599562E-01, 1.352794E-01, 1.813127E+00
, -1.393698E-01"
## [1] "Llh: -1.03620540691083E+03; Pars: 4.341502E-01, 2.126291E-01, 1.928411E+00
, -2.246446E-01"

```

```

## [1] "Llh: -1.03529645946283E+03; Pars: 4.452079E-01, 1.831916E-01, 1.838263E+00
, -1.822922E-01"
## [1] "Llh: -1.03764016349338E+03; Pars: 3.876574E-01, 1.731204E-01, 2.017187E+00
, -1.663308E-01"
## [1] "Llh: -1.03565619490177E+03; Pars: 4.141302E-01, 1.675042E-01, 1.909888E+00
, -1.588640E-01"
## [1] "Llh: -1.03599335150468E+03; Pars: 4.186438E-01, 2.014202E-01, 1.957016E+00
, -1.557518E-01"
## [1] "Llh: -1.03529569667100E+03; Pars: 4.260357E-01, 1.854165E-01, 1.902263E+00
, -1.545596E-01"
## [1] "Llh: -1.03524161948257E+03; Pars: 3.933173E-01, 2.286147E-01, 1.931463E+00
, -1.749598E-01"
## [1] "Llh: -1.03503572171830E+03; Pars: 4.090123E-01, 2.052809E-01, 1.901174E+00
, -1.660623E-01"
## [1] "Llh: -1.03448429471960E+03; Pars: 4.341326E-01, 2.152782E-01, 1.829421E+00
, -1.590648E-01"
## [1] "Llh: -1.03464930386566E+03; Pars: 4.290432E-01, 2.033347E-01, 1.849214E+00
, -1.590146E-01"
## [1] "Llh: -1.03462345220581E+03; Pars: 3.987734E-01, 2.156341E-01, 1.896124E+00
, -1.240229E-01"
## [1] "Llh: -1.03460934005496E+03; Pars: 4.099070E-01, 2.075235E-01, 1.881490E+00
, -1.385902E-01"
## [1] "Llh: -1.03420585459483E+03; Pars: 4.087546E-01, 2.244627E-01, 1.822299E+00
, -1.437708E-01"
## [1] "Llh: -1.03422652316143E+03; Pars: 4.003787E-01, 2.439858E-01, 1.783587E+00
, -1.383764E-01"
## [1] "Llh: -1.03435743077484E+03; Pars: 4.256331E-01, 2.141892E-01, 1.785120E+00
, -1.211224E-01"
## [1] "Llh: -1.03428927942622E+03; Pars: 4.214156E-01, 2.119621E-01, 1.813452E+00
, -1.323573E-01"
## [1] "Llh: -1.03457721336673E+03; Pars: 4.306249E-01, 2.141659E-01, 1.770880E+00
, -1.454780E-01"
## [1] "Llh: -1.03439217886028E+03; Pars: 4.253493E-01, 2.125053E-01, 1.797908E+00
, -1.437561E-01"
## [1] "Llh: -1.03421339662706E+03; Pars: 4.024609E-01, 2.050248E-01, 1.805529E+00
, -1.173490E-01"
## [1] "Llh: -1.03425140470253E+03; Pars: 4.101554E-01, 2.075882E-01, 1.811472E+00
, -1.277780E-01"
## [1] "Llh: -1.03427457559844E+03; Pars: 4.121432E-01, 2.353016E-01, 1.783634E+00
, -1.356732E-01"
## [1] "Llh: -1.03424116927422E+03; Pars: 4.132657E-01, 2.243952E-01, 1.796657E+00
, -1.349907E-01"
## [1] "Llh: -1.03412435668118E+03; Pars: 3.979399E-01, 2.204171E-01, 1.821085E+00
, -1.204779E-01"
## [1] "Llh: -1.03408878443982E+03; Pars: 3.849049E-01, 2.243730E-01, 1.832785E+00
, -1.088388E-01"
## [1] "Llh: -1.03406167602004E+03; Pars: 3.838610E-01, 2.271657E-01, 1.815074E+00
, -1.201173E-01"
## [1] "Llh: -1.03401428674419E+03; Pars: 3.663579E-01, 2.347675E-01, 1.815886E+00
, -1.139973E-01"

```

```

## [1] "Llh: -1.03404783250909E+03; Pars: 3.685474E-01, 2.199188E-01, 1.841820E+00
, -1.069872E-01"
## [1] "Llh: -1.03405541922532E+03; Pars: 3.792515E-01, 2.210379E-01, 1.830424E+00
, -1.139881E-01"
## [1] "Llh: -1.03408388415477E+03; Pars: 3.621461E-01, 2.467361E-01, 1.851097E+00
, -1.194481E-01"
## [1] "Llh: -1.03404735422650E+03; Pars: 3.718294E-01, 2.363083E-01, 1.839598E+00
, -1.189233E-01"
## [1] "Llh: -1.03411703808410E+03; Pars: 3.400834E-01, 2.332211E-01, 1.842746E+00
, -8.060253E-02"
## [1] "Llh: -1.03404694000785E+03; Pars: 3.560859E-01, 2.310315E-01, 1.837613E+00
, -9.639460E-02"
## [1] "Llh: -1.03397646397176E+03; Pars: 3.473724E-01, 2.366401E-01, 1.834614E+00
, -1.093125E-01"
## [1] "Llh: -1.03394879009685E+03; Pars: 3.300017E-01, 2.427736E-01, 1.835529E+00
, -1.095493E-01"
## [1] "Llh: -1.03401930655536E+03; Pars: 3.432945E-01, 2.525217E-01, 1.822495E+00
, -1.124450E-01"
## [1] "Llh: -1.03399949468057E+03; Pars: 3.494407E-01, 2.443709E-01, 1.827307E+00
, -1.110806E-01"
## [1] "Llh: -1.03400545451341E+03; Pars: 3.298612E-01, 2.401635E-01, 1.818590E+00
, -9.658758E-02"
## [1] "Llh: -1.03398948571381E+03; Pars: 3.398868E-01, 2.391997E-01, 1.823819E+00
, -1.021715E-01"
## [1] "Llh: -1.03394975142870E+03; Pars: 3.365194E-01, 2.495244E-01, 1.813709E+00
, -1.220048E-01"
## [1] "Llh: -1.03395940909351E+03; Pars: 3.413078E-01, 2.449011E-01, 1.819656E+00
, -1.156022E-01"
## [1] "Llh: -1.03397278722606E+03; Pars: 3.134811E-01, 2.531668E-01, 1.834309E+00
, -1.084057E-01"
## [1] "Llh: -1.03396173697741E+03; Pars: 3.259380E-01, 2.485670E-01, 1.829686E+00
, -1.098036E-01"
## [1] "Llh: -1.03392145666952E+03; Pars: 3.174127E-01, 2.456614E-01, 1.824030E+00
, -1.106840E-01"
## [1] "Llh: -1.03389812258890E+03; Pars: 3.025170E-01, 2.463066E-01, 1.822394E+00
, -1.104857E-01"
## [1] "Llh: -1.03388342783222E+03; Pars: 3.078727E-01, 2.543861E-01, 1.826805E+00
, -1.237502E-01"
## [1] "Llh: -1.03385067131847E+03; Pars: 2.930148E-01, 2.619793E-01, 1.828299E+00
, -1.345395E-01"
## [1] "Llh: -1.03385457723752E+03; Pars: 3.044022E-01, 2.517250E-01, 1.820257E+00
, -1.284860E-01"
## [1] "Llh: -1.03387397219243E+03; Pars: 3.096489E-01, 2.509355E-01, 1.822610E+00
, -1.238154E-01"
## [1] "Llh: -1.03384671534404E+03; Pars: 2.804088E-01, 2.518679E-01, 1.839603E+00
, -1.195255E-01"
## [1] "Llh: -1.03385540848446E+03; Pars: 2.559660E-01, 2.530396E-01, 1.852689E+00
, -1.182859E-01"
## [1] "Llh: -1.03382843824053E+03; Pars: 2.635865E-01, 2.631657E-01, 1.819751E+00
, -1.369691E-01"

```

```

## [1] "Llh: -1.03385870294694E+03; Pars: 2.355736E-01, 2.733618E-01, 1.811913E+00
, -1.506790E-01"
## [1] "Llh: -1.03380014417974E+03; Pars: 2.683961E-01, 2.680624E-01, 1.831537E+00
, -1.492743E-01"
## [1] "Llh: -1.03379534370196E+03; Pars: 2.528072E-01, 2.789402E-01, 1.836126E+00
, -1.686687E-01"
## [1] "Llh: -1.03381920112815E+03; Pars: 2.430799E-01, 2.762516E-01, 1.841663E+00
, -1.513654E-01"
## [1] "Llh: -1.03381025956217E+03; Pars: 2.571424E-01, 2.701200E-01, 1.836288E+00
, -1.456455E-01"
## [1] "Llh: -1.03378775119691E+03; Pars: 2.365645E-01, 2.700676E-01, 1.837564E+00
, -1.508649E-01"
## [1] "Llh: -1.03379401895725E+03; Pars: 2.125590E-01, 2.741117E-01, 1.842214E+00
, -1.590276E-01"
## [1] "Llh: -1.03383108383578E+03; Pars: 2.270526E-01, 2.892789E-01, 1.825260E+00
, -1.815486E-01"
## [1] "Llh: -1.03380321354912E+03; Pars: 2.393551E-01, 2.799261E-01, 1.828835E+00
, -1.660428E-01"
## [1] "Llh: -1.03381792551343E+03; Pars: 2.301731E-01, 2.863612E-01, 1.849772E+00
, -1.786418E-01"
## [1] "Llh: -1.03379847508747E+03; Pars: 2.381068E-01, 2.805624E-01, 1.842220E+00
, -1.682237E-01"
## [1] "Llh: -1.03380175477187E+03; Pars: 2.270403E-01, 2.846282E-01, 1.836072E+00
, -1.812545E-01"
## [1] "Llh: -1.03379346427043E+03; Pars: 2.342182E-01, 2.810011E-01, 1.836126E+00
, -1.723522E-01"
## [1] "Llh: -1.03379190625013E+03; Pars: 2.412809E-01, 2.753595E-01, 1.847225E+00
, -1.640119E-01"
## [1] "Llh: -1.03378931010616E+03; Pars: 2.407980E-01, 2.765012E-01, 1.842611E+00
, -1.645196E-01"
## [1] "Llh: -1.03378154033067E+03; Pars: 2.439128E-01, 2.726927E-01, 1.833998E+00
, -1.599790E-01"
## [1] "Llh: -1.03377891424837E+03; Pars: 2.468687E-01, 2.687579E-01, 1.829901E+00
, -1.558567E-01"
## [1] "Llh: -1.03378114413628E+03; Pars: 2.270152E-01, 2.692237E-01, 1.836964E+00
, -1.531281E-01"
## [1] "Llh: -1.03378109212664E+03; Pars: 2.332054E-01, 2.716528E-01, 1.836754E+00
, -1.570132E-01"
## [1] "Llh: -1.03378230703524E+03; Pars: 2.445023E-01, 2.624886E-01, 1.837278E+00
, -1.417750E-01"
## [1] "Llh: -1.03378021115752E+03; Pars: 2.418897E-01, 2.671167E-01, 1.836990E+00
, -1.494193E-01"
## [1] "Llh: -1.03378824772112E+03; Pars: 2.383597E-01, 2.622963E-01, 1.828017E+00
, -1.420575E-01"
## [1] "Llh: -1.03378224082734E+03; Pars: 2.389669E-01, 2.658476E-01, 1.831655E+00
, -1.476730E-01"
## [1] "Llh: -1.03377460314884E+03; Pars: 2.438543E-01, 2.666199E-01, 1.830088E+00
, -1.541163E-01"
## [1] "Llh: -1.03377442935203E+03; Pars: 2.475830E-01, 2.648961E-01, 1.826362E+00
, -1.557419E-01"

```

```

## [1] "Llh: -1.03377384889158E+03; Pars: 2.457161E-01, 2.703642E-01, 1.833337E+00
, -1.613426E-01"
## [1] "Llh: -1.03377627080812E+03; Pars: 2.491618E-01, 2.726225E-01, 1.834179E+00
, -1.681774E-01"
## [1] "Llh: -1.03377661335366E+03; Pars: 2.584522E-01, 2.639147E-01, 1.826546E+00
, -1.541671E-01"
## [1] "Llh: -1.03377438716690E+03; Pars: 2.518952E-01, 2.658492E-01, 1.829093E+00
, -1.548786E-01"
## [1] "Llh: -1.03378547311361E+03; Pars: 2.542745E-01, 2.678170E-01, 1.822382E+00
, -1.644906E-01"
## [1] "Llh: -1.03377523888904E+03; Pars: 2.449281E-01, 2.672918E-01, 1.833327E+00
, -1.531871E-01"
## [1] "Llh: -1.03376842157460E+03; Pars: 2.481650E-01, 2.654427E-01, 1.831154E+00
, -1.567184E-01"
## [1] "Llh: -1.03376460730565E+03; Pars: 2.488157E-01, 2.637851E-01, 1.831781E+00
, -1.571493E-01"
## [1] "Llh: -1.03377230018055E+03; Pars: 2.521084E-01, 2.651555E-01, 1.826961E+00
, -1.613691E-01"
## [1] "Llh: -1.03377076752410E+03; Pars: 2.502938E-01, 2.656896E-01, 1.828551E+00
, -1.593236E-01"
## [1] "Llh: -1.03376963524313E+03; Pars: 2.507667E-01, 2.679480E-01, 1.835028E+00
, -1.606051E-01"
## [1] "Llh: -1.03376936707642E+03; Pars: 2.499669E-01, 2.671850E-01, 1.832857E+00
, -1.593893E-01"
## [1] "Llh: -1.03376662638118E+03; Pars: 2.455286E-01, 2.676628E-01, 1.834172E+00
, -1.637238E-01"
## [1] "Llh: -1.03376745463142E+03; Pars: 2.471050E-01, 2.672094E-01, 1.832901E+00
, -1.615125E-01"
## [1] "Llh: -1.03376380575634E+03; Pars: 2.516070E-01, 2.617970E-01, 1.830342E+00
, -1.584503E-01"
## [1] "Llh: -1.03376355185551E+03; Pars: 2.546052E-01, 2.575135E-01, 1.828846E+00
, -1.570042E-01"
## [1] "Llh: -1.03376034009860E+03; Pars: 2.491235E-01, 2.623836E-01, 1.835282E+00
, -1.593097E-01"
## [1] "Llh: -1.03375859651226E+03; Pars: 2.485404E-01, 2.607306E-01, 1.838657E+00
, -1.593027E-01"
## [1] "Llh: -1.03375851096562E+03; Pars: 2.487365E-01, 2.576610E-01, 1.833864E+00
, -1.592007E-01"
## [1] "Llh: -1.03376097597162E+03; Pars: 2.481236E-01, 2.528990E-01, 1.834368E+00
, -1.591064E-01"
## [1] "Llh: -1.03375791781926E+03; Pars: 2.548817E-01, 2.521823E-01, 1.832396E+00
, -1.526047E-01"
## [1] "Llh: -1.03376234095842E+03; Pars: 2.596910E-01, 2.444421E-01, 1.831508E+00
, -1.470451E-01"
## [1] "Llh: -1.03376261418051E+03; Pars: 2.545620E-01, 2.502586E-01, 1.835095E+00
, -1.569069E-01"
## [1] "Llh: -1.03375903452899E+03; Pars: 2.531131E-01, 2.536402E-01, 1.834266E+00
, -1.569675E-01"
## [1] "Llh: -1.03375688485823E+03; Pars: 2.480433E-01, 2.545936E-01, 1.840761E+00
, -1.570336E-01"

```

```

## [1] "Llh: -1.03376214801012E+03; Pars: 2.448261E-01, 2.531337E-01, 1.846748E+00
, -1.570483E-01"
## [1] "Llh: -1.03375635265410E+03; Pars: 2.469942E-01, 2.589436E-01, 1.838569E+00
, -1.571033E-01"
## [1] "Llh: -1.03375865099437E+03; Pars: 2.439905E-01, 2.615953E-01, 1.840725E+00
, -1.571713E-01"
## [1] "Llh: -1.03375695489085E+03; Pars: 2.507548E-01, 2.509596E-01, 1.834135E+00
, -1.536684E-01"
## [1] "Llh: -1.03375605186530E+03; Pars: 2.501994E-01, 2.534024E-01, 1.835264E+00
, -1.550770E-01"
## [1] "Llh: -1.03375481035943E+03; Pars: 2.512928E-01, 2.519000E-01, 1.839630E+00
, -1.517086E-01"
## [1] "Llh: -1.03375630288824E+03; Pars: 2.525808E-01, 2.490194E-01, 1.842520E+00
, -1.479626E-01"
## [1] "Llh: -1.03375882883107E+03; Pars: 2.435015E-01, 2.572374E-01, 1.844735E+00
, -1.578566E-01"
## [1] "Llh: -1.03375575074360E+03; Pars: 2.519877E-01, 2.534461E-01, 1.835473E+00
, -1.539177E-01"
## [1] "Llh: -1.03375580928832E+03; Pars: 2.521963E-01, 2.542524E-01, 1.833712E+00
, -1.518697E-01"
## [1] "Llh: -1.03375507321264E+03; Pars: 2.511516E-01, 2.543377E-01, 1.835472E+00
, -1.531607E-01"
## [1] "Llh: -1.03375774841141E+03; Pars: 2.553900E-01, 2.475995E-01, 1.834351E+00
, -1.498286E-01"
## [1] "Llh: -1.03375518344542E+03; Pars: 2.490669E-01, 2.561076E-01, 1.837514E+00
, -1.552847E-01"
## [1] "Llh: -1.03375499450719E+03; Pars: 2.515472E-01, 2.544933E-01, 1.838780E+00
, -1.519588E-01"
## [1] "Llh: -1.03375474995397E+03; Pars: 2.512096E-01, 2.542206E-01, 1.837901E+00
, -1.527384E-01"
## [1] "Llh: -1.03375467195135E+03; Pars: 2.493760E-01, 2.548368E-01, 1.839787E+00
, -1.525285E-01"
## [1] "Llh: -1.03375575658706E+03; Pars: 2.480804E-01, 2.555321E-01, 1.841947E+00
, -1.518339E-01"
## [1] "Llh: -1.03375440718937E+03; Pars: 2.524570E-01, 2.515399E-01, 1.838879E+00
, -1.497834E-01"
## [1] "Llh: -1.03375492684038E+03; Pars: 2.541692E-01, 2.492561E-01, 1.839562E+00
, -1.470328E-01"
## [1] "Llh: -1.03375606658237E+03; Pars: 2.510113E-01, 2.519109E-01, 1.842633E+00
, -1.502188E-01"
## [1] "Llh: -1.03375450643558E+03; Pars: 2.511165E-01, 2.537310E-01, 1.837259E+00
, -1.524252E-01"
## [1] "Llh: -1.03375482089363E+03; Pars: 2.507822E-01, 2.552642E-01, 1.837283E+00
, -1.520291E-01"
## [1] "Llh: -1.03375452399488E+03; Pars: 2.511651E-01, 2.527410E-01, 1.839043E+00
, -1.517887E-01"
## [1] "Llh: -1.03375418218744E+03; Pars: 2.508430E-01, 2.522038E-01, 1.839584E+00
, -1.505246E-01"
## [1] "Llh: -1.03375417724700E+03; Pars: 2.506600E-01, 2.511954E-01, 1.840426E+00
, -1.494177E-01"

```

```

## [1] "Llh: -1.03375461910921E+03; Pars: 2.533370E-01, 2.497669E-01, 1.838017E+00
, -1.491790E-01"
## [1] "Llh: -1.03375433821477E+03; Pars: 2.523409E-01, 2.510344E-01, 1.838459E+00
, -1.500164E-01"
## [1] "Llh: -1.03375398466219E+03; Pars: 2.521206E-01, 2.510094E-01, 1.838468E+00
, -1.490326E-01"
## [1] "Llh: -1.03375388247226E+03; Pars: 2.525998E-01, 2.501435E-01, 1.838181E+00
, -1.476545E-01"
## [1] "Llh: -1.03375484390692E+03; Pars: 2.529131E-01, 2.482256E-01, 1.840714E+00
, -1.460108E-01"
## [1] "Llh: -1.03375416737997E+03; Pars: 2.515644E-01, 2.523547E-01, 1.838123E+00
, -1.508216E-01"
## [1] "Llh: -1.03375368014555E+03; Pars: 2.511251E-01, 2.508241E-01, 1.838714E+00
, -1.491717E-01"
## [1] "Llh: -1.03375336906706E+03; Pars: 2.504618E-01, 2.504661E-01, 1.838632E+00
, -1.488658E-01"
## [1] "Llh: -1.03375338712520E+03; Pars: 2.503034E-01, 2.510455E-01, 1.839221E+00
, -1.483634E-01"
## [1] "Llh: -1.03375356694901E+03; Pars: 2.508112E-01, 2.510427E-01, 1.839030E+00
, -1.487767E-01"
## [1] "Llh: -1.03375364204313E+03; Pars: 2.518026E-01, 2.508095E-01, 1.836654E+00
, -1.484350E-01"
## [1] "Llh: -1.03375356499512E+03; Pars: 2.515165E-01, 2.509060E-01, 1.837596E+00
, -1.486807E-01"
## [1] "Llh: -1.03375316043782E+03; Pars: 2.508734E-01, 2.489259E-01, 1.838692E+00
, -1.459606E-01"
## [1] "Llh: -1.03375315647967E+03; Pars: 2.505286E-01, 2.472116E-01, 1.838977E+00
, -1.435302E-01"
## [1] "Llh: -1.03375264701954E+03; Pars: 2.488187E-01, 2.496711E-01, 1.839032E+00
, -1.470655E-01"
## [1] "Llh: -1.03375223260169E+03; Pars: 2.469494E-01, 2.494348E-01, 1.839458E+00
, -1.467710E-01"
## [1] "Llh: -1.03375274010471E+03; Pars: 2.476112E-01, 2.481730E-01, 1.840549E+00
, -1.450845E-01"
## [1] "Llh: -1.03375273180496E+03; Pars: 2.485818E-01, 2.488563E-01, 1.839810E+00
, -1.459836E-01"
## [1] "Llh: -1.03375250678286E+03; Pars: 2.479541E-01, 2.469389E-01, 1.839218E+00
, -1.442118E-01"
## [1] "Llh: -1.03375256521222E+03; Pars: 2.485394E-01, 2.479655E-01, 1.839219E+00
, -1.452497E-01"
## [1] "Llh: -1.03375274009107E+03; Pars: 2.465536E-01, 2.457546E-01, 1.840100E+00
, -1.413825E-01"
## [1] "Llh: -1.03375253380764E+03; Pars: 2.475249E-01, 2.469325E-01, 1.839733E+00
, -1.432533E-01"
## [1] "Llh: -1.03375205338504E+03; Pars: 2.450059E-01, 2.488697E-01, 1.840133E+00
, -1.465797E-01"
## [1] "Llh: -1.03375203143681E+03; Pars: 2.422904E-01, 2.496987E-01, 1.840711E+00
, -1.481045E-01"
## [1] "Llh: -1.03375182122184E+03; Pars: 2.437799E-01, 2.476462E-01, 1.839749E+00
, -1.451867E-01"

```

```

## [1] "Llh: -1.03375177718698E+03; Pars: 2.414138E-01, 2.470412E-01, 1.839719E+00
, -1.447883E-01"
## [1] "Llh: -1.03375194312326E+03; Pars: 2.417797E-01, 2.496243E-01, 1.839820E+00
, -1.486845E-01"
## [1] "Llh: -1.03375184218726E+03; Pars: 2.432034E-01, 2.489513E-01, 1.839798E+00
, -1.473267E-01"
## [1] "Llh: -1.03375199719916E+03; Pars: 2.390378E-01, 2.506241E-01, 1.840625E+00
, -1.492834E-01"
## [1] "Llh: -1.03375179714221E+03; Pars: 2.412364E-01, 2.497028E-01, 1.840273E+00
, -1.480155E-01"
## [1] "Llh: -1.03375230976766E+03; Pars: 2.372178E-01, 2.482622E-01, 1.840792E+00
, -1.473465E-01"
## [1] "Llh: -1.03375188222551E+03; Pars: 2.444797E-01, 2.491417E-01, 1.839792E+00
, -1.469149E-01"
## [1] "Llh: -1.03375165049042E+03; Pars: 2.428692E-01, 2.477198E-01, 1.839080E+00
, -1.454182E-01"
## [1] "Llh: -1.03375176384236E+03; Pars: 2.431592E-01, 2.467303E-01, 1.838266E+00
, -1.440751E-01"
## [1] "Llh: -1.03375179429214E+03; Pars: 2.399002E-01, 2.475659E-01, 1.839643E+00
, -1.458595E-01"
## [1] "Llh: -1.03375170615912E+03; Pars: 2.410370E-01, 2.479598E-01, 1.839681E+00
, -1.461234E-01"
## [1] "Llh: -1.03375170213068E+03; Pars: 2.400827E-01, 2.472604E-01, 1.839578E+00
, -1.448460E-01"
## [1] "Llh: -1.03375166074214E+03; Pars: 2.408591E-01, 2.476832E-01, 1.839633E+00
, -1.454662E-01"
## [1] "Llh: -1.03375204058494E+03; Pars: 2.418510E-01, 2.454991E-01, 1.838784E+00
, -1.428825E-01"
## [1] "Llh: -1.03375167807044E+03; Pars: 2.413899E-01, 2.486519E-01, 1.839901E+00
, -1.467323E-01"
## [1] "Llh: -1.03375160747346E+03; Pars: 2.416613E-01, 2.489662E-01, 1.839429E+00
, -1.470817E-01"
## [1] "Llh: -1.03375164794864E+03; Pars: 2.417851E-01, 2.499287E-01, 1.839284E+00
, -1.482284E-01"
## [1] "Llh: -1.03375157015828E+03; Pars: 2.423523E-01, 2.485507E-01, 1.839341E+00
, -1.462259E-01"
## [1] "Llh: -1.03375155374790E+03; Pars: 2.430126E-01, 2.488461E-01, 1.839171E+00
, -1.462771E-01"
## [1] "Llh: -1.03375156571822E+03; Pars: 2.428101E-01, 2.479557E-01, 1.838756E+00
, -1.453894E-01"
## [1] "Llh: -1.03375156519934E+03; Pars: 2.424543E-01, 2.481298E-01, 1.839042E+00
, -1.457251E-01"
## [1] "Llh: -1.03375164736775E+03; Pars: 2.441496E-01, 2.491477E-01, 1.838728E+00
, -1.467849E-01"
## [1] "Llh: -1.03375159057127E+03; Pars: 2.433228E-01, 2.487816E-01, 1.838954E+00
, -1.464552E-01"
## [1] "Llh: -1.03375154732329E+03; Pars: 2.423549E-01, 2.496420E-01, 1.839218E+00
, -1.473513E-01"
## [1] "Llh: -1.03375160571551E+03; Pars: 2.420981E-01, 2.506032E-01, 1.839287E+00
, -1.483178E-01"

```

```

## [1] "Llh: -1.03375157577097E+03; Pars: 2.439156E-01, 2.487336E-01, 1.838764E+00
, -1.458226E-01"
## [1] "Llh: -1.03375155133516E+03; Pars: 2.433500E-01, 2.487917E-01, 1.838930E+00
, -1.461374E-01"
## [1] "Llh: -1.03375149892817E+03; Pars: 2.422636E-01, 2.489232E-01, 1.839227E+00
, -1.462902E-01"
## [1] "Llh: -1.03375147355155E+03; Pars: 2.417357E-01, 2.489940E-01, 1.839363E+00
, -1.462077E-01"
## [1] "Llh: -1.03375155582073E+03; Pars: 2.427709E-01, 2.500072E-01, 1.839299E+00
, -1.472617E-01"
## [1] "Llh: -1.03375152631498E+03; Pars: 2.426917E-01, 2.495378E-01, 1.839235E+00
, -1.468775E-01"
## [1] "Llh: -1.03375148521370E+03; Pars: 2.420531E-01, 2.496367E-01, 1.839201E+00
, -1.470099E-01"
## [1] "Llh: -1.03375149584112E+03; Pars: 2.422926E-01, 2.494391E-01, 1.839194E+00
, -1.468267E-01"
## [1] "Llh: -1.03375152108678E+03; Pars: 2.410725E-01, 2.501136E-01, 1.839578E+00
, -1.475858E-01"
## [1] "Llh: -1.03375150139569E+03; Pars: 2.416399E-01, 2.497831E-01, 1.839416E+00
, -1.472237E-01"
## [1] "Llh: -1.03375145875247E+03; Pars: 2.417050E-01, 2.493338E-01, 1.839389E+00
, -1.463082E-01"
## [1] "Llh: -1.03375145571002E+03; Pars: 2.413808E-01, 2.491797E-01, 1.839475E+00
, -1.457866E-01"
## [1] "Llh: -1.03375144456582E+03; Pars: 2.407168E-01, 2.492590E-01, 1.839493E+00
, -1.462364E-01"
## [1] "Llh: -1.03375146535711E+03; Pars: 2.397354E-01, 2.491195E-01, 1.839622E+00
, -1.459159E-01"
## [1] "Llh: -1.03375145018805E+03; Pars: 2.413024E-01, 2.487516E-01, 1.839350E+00
, -1.453966E-01"
## [1] "Llh: -1.03375144465373E+03; Pars: 2.413867E-01, 2.490095E-01, 1.839367E+00
, -1.458534E-01"
## [1] "Llh: -1.03375149398045E+03; Pars: 2.405587E-01, 2.485844E-01, 1.839647E+00
, -1.450322E-01"
## [1] "Llh: -1.03375145639200E+03; Pars: 2.416786E-01, 2.493736E-01, 1.839313E+00
, -1.465155E-01"
## [1] "Llh: -1.03375143971044E+03; Pars: 2.408461E-01, 2.494168E-01, 1.839461E+00
, -1.459882E-01"
## [1] "Llh: -1.03375145958614E+03; Pars: 2.404024E-01, 2.496282E-01, 1.839511E+00
, -1.458784E-01"
## [1] "Llh: -1.03375146675957E+03; Pars: 2.404877E-01, 2.490589E-01, 1.839585E+00
, -1.454168E-01"
## [1] "Llh: -1.03375144407712E+03; Pars: 2.413803E-01, 2.492949E-01, 1.839381E+00
, -1.462408E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375144296223E+03; Pars: 2.404864E-01, 2.493757E-01, 1.839326E+00
, -1.466659E-01"
## [1] "Llh: -1.03375144454155E+03; Pars: 2.412662E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"

```

```

## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375150077734E+03; Pars: 2.410251E-01, 2.503104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375161218109E+03; Pars: 2.410251E-01, 2.483104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375192218527E+03; Pars: 2.410251E-01, 2.493104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375150875281E+03; Pars: 2.410251E-01, 2.493104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375146643683E+03; Pars: 2.410251E-01, 2.493104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375156526631E+03; Pars: 2.410251E-01, 2.493104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375143341364E+03; Pars: 2.403031E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375149040832E+03; Pars: 2.405435E-01, 2.503104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375161145592E+03; Pars: 2.405435E-01, 2.483104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375189719886E+03; Pars: 2.405435E-01, 2.493104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375152256704E+03; Pars: 2.405435E-01, 2.493104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375146058184E+03; Pars: 2.405435E-01, 2.493104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375156000612E+03; Pars: 2.405435E-01, 2.493104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375150077734E+03; Pars: 2.410251E-01, 2.503104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375149040832E+03; Pars: 2.405435E-01, 2.503104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375179010638E+03; Pars: 2.407842E-01, 2.513104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375199261276E+03; Pars: 2.407842E-01, 2.503104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375155007438E+03; Pars: 2.407842E-01, 2.503104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375167692177E+03; Pars: 2.407842E-01, 2.503104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375146663785E+03; Pars: 2.407842E-01, 2.503104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375161218109E+03; Pars: 2.410251E-01, 2.483104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375161145592E+03; Pars: 2.405435E-01, 2.483104E-01, 1.839376E+00
, -1.463728E-01"

```

```

## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375202238223E+03; Pars: 2.407842E-01, 2.473104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375206013728E+03; Pars: 2.407842E-01, 2.483104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375171514665E+03; Pars: 2.407842E-01, 2.483104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375148372543E+03; Pars: 2.407842E-01, 2.483104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375189227293E+03; Pars: 2.407842E-01, 2.483104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375192218527E+03; Pars: 2.410251E-01, 2.493104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375189719886E+03; Pars: 2.405435E-01, 2.493104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375199261276E+03; Pars: 2.407842E-01, 2.503104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375206013728E+03; Pars: 2.407842E-01, 2.483104E-01, 1.841216E+00
, -1.463728E-01"
## [1] "Llh: -1.03375293559778E+03; Pars: 2.407842E-01, 2.493104E-01, 1.843058E+00
, -1.463728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375194694942E+03; Pars: 2.407842E-01, 2.493104E-01, 1.841216E+00
, -1.453728E-01"
## [1] "Llh: -1.03375202441111E+03; Pars: 2.407842E-01, 2.493104E-01, 1.841216E+00
, -1.473728E-01"
## [1] "Llh: -1.03375150875281E+03; Pars: 2.410251E-01, 2.493104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375152256704E+03; Pars: 2.405435E-01, 2.493104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375155007438E+03; Pars: 2.407842E-01, 2.503104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375171514665E+03; Pars: 2.407842E-01, 2.483104E-01, 1.837537E+00
, -1.463728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375214865423E+03; Pars: 2.407842E-01, 2.493104E-01, 1.835701E+00
, -1.463728E-01"
## [1] "Llh: -1.03375153158930E+03; Pars: 2.407842E-01, 2.493104E-01, 1.837537E+00
, -1.453728E-01"
## [1] "Llh: -1.03375165249037E+03; Pars: 2.407842E-01, 2.493104E-01, 1.837537E+00
, -1.473728E-01"
## [1] "Llh: -1.03375146643683E+03; Pars: 2.410251E-01, 2.493104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375146058184E+03; Pars: 2.405435E-01, 2.493104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375167692177E+03; Pars: 2.407842E-01, 2.503104E-01, 1.839376E+00
, -1.453728E-01"

```

```

## [1] "Llh: -1.03375148372543E+03; Pars: 2.407842E-01, 2.483104E-01, 1.839376E+00
, -1.453728E-01"
## [1] "Llh: -1.03375194694942E+03; Pars: 2.407842E-01, 2.493104E-01, 1.841216E+00
, -1.453728E-01"
## [1] "Llh: -1.03375153158930E+03; Pars: 2.407842E-01, 2.493104E-01, 1.837537E+00
, -1.453728E-01"
## [1] "Llh: -1.03375164459995E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.443728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375156526631E+03; Pars: 2.410251E-01, 2.493104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375156000612E+03; Pars: 2.405435E-01, 2.493104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375146663785E+03; Pars: 2.407842E-01, 2.503104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375189227293E+03; Pars: 2.407842E-01, 2.483104E-01, 1.839376E+00
, -1.473728E-01"
## [1] "Llh: -1.03375202441111E+03; Pars: 2.407842E-01, 2.493104E-01, 1.841216E+00
, -1.473728E-01"
## [1] "Llh: -1.03375165249037E+03; Pars: 2.407842E-01, 2.493104E-01, 1.837537E+00
, -1.473728E-01"
## [1] "Llh: -1.03375143480032E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.463728E-01"
## [1] "Llh: -1.03375184282569E+03; Pars: 2.407842E-01, 2.493104E-01, 1.839376E+00
, -1.483728E-01"
## Currently fitting: asymmetric NIG
## [1] "Llh: -1.06888497408102E+03; Pars: 5.000000E-01, 1.733995E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.06768822691142E+03; Pars: 5.358867E-01, 1.733995E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.07022077669511E+03; Pars: 5.000000E-01, 2.427142E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.05590421380019E+03; Pars: 5.000000E-01, 1.733995E-01, 1.415787E+00
, 0.000000E+00"
## [1] "Llh: -1.07130485531852E+03; Pars: 5.000000E-01, 1.733995E-01, 1.320976E+00
, 6.931472E-02"
## [1] "Llh: -1.06070126173966E+03; Pars: 5.176325E-01, 2.080569E-01, 1.367560E+00
, -6.931472E-02"
## [1] "Llh: -1.06277743848370E+03; Pars: 5.131669E-01, 1.993925E-01, 1.355762E+00
, -3.465736E-02"
## [1] "Llh: -1.05820879178717E+03; Pars: 5.266805E-01, 1.214135E-01, 1.391465E+00
, -3.465736E-02"
## [1] "Llh: -1.06027945788674E+03; Pars: 5.198798E-01, 1.517387E-01, 1.373498E+00
, -2.599302E-02"
## [1] "Llh: -1.05290576491129E+03; Pars: 5.405500E-01, 1.647352E-01, 1.428107E+00
, -5.198604E-02"
## [1] "Llh: -1.04695526108725E+03; Pars: 5.620421E-01, 1.604030E-01, 1.484888E+00
, -7.797906E-02"
## [1] "Llh: -1.04558540399790E+03; Pars: 5.165124E-01, 1.582369E-01, 1.514120E+00

```

, -9.097557E-02"
[1] "Llh: -1.03939068344824E+03; Pars: 5.070896E-01, 1.506556E-01, 1.621037E+00
, -1.364634E-01"
[1] "Llh: -1.04077937027893E+03; Pars: 5.292537E-01, 9.487892E-02, 1.592326E+00
, -5.523517E-02"
[1] "Llh: -1.04422936602297E+03; Pars: 5.263241E-01, 1.231734E-01, 1.532889E+00
, -5.875505E-02"
[1] "Llh: -1.03571591312373E+03; Pars: 5.214305E-01, 1.682551E-01, 1.674118E+00
, -1.001814E-01"
[1] "Llh: -1.03172330769078E+03; Pars: 5.188251E-01, 1.916758E-01, 1.836297E+00
, -1.329435E-01"
[1] "Llh: -1.03418957408743E+03; Pars: 5.594988E-01, 1.254072E-01, 1.873841E+00
, -2.013105E-01"
[1] "Llh: -1.03453524785589E+03; Pars: 5.439912E-01, 1.374053E-01, 1.747025E+00
, -1.509829E-01"
[1] "Llh: -1.03389123715462E+03; Pars: 4.966101E-01, 1.209058E-01, 2.007043E+00
, -1.849972E-01"
[1] "Llh: -1.03304190782916E+03; Pars: 5.122169E-01, 1.307801E-01, 1.861405E+00
, -1.582427E-01"
[1] "Llh: -1.03362883758666E+03; Pars: 5.188186E-01, 2.043804E-01, 2.023592E+00
, -2.592448E-01"
[1] "Llh: -1.03259110144618E+03; Pars: 5.214079E-01, 1.770051E-01, 1.905900E+00
, -2.082424E-01"
[1] "Llh: -1.03695907073970E+03; Pars: 5.490870E-01, 1.617785E-01, 2.155339E+00
, -2.139062E-01"
[1] "Llh: -1.03344832335604E+03; Pars: 5.382723E-01, 1.589978E-01, 2.007173E+00
, -1.945455E-01"
[1] "Llh: -1.03130976689579E+03; Pars: 4.881217E-01, 2.038222E-01, 1.929752E+00
, -1.456765E-01"
[1] "Llh: -1.03129695773493E+03; Pars: 4.559241E-01, 2.430297E-01, 1.958330E+00
, -1.178595E-01"
[1] "Llh: -1.03284424842067E+03; Pars: 4.669501E-01, 2.122476E-01, 1.779509E+00
, -1.140985E-01"
[1] "Llh: -1.03184665247343E+03; Pars: 4.838418E-01, 1.989351E-01, 1.833882E+00
, -1.342103E-01"
[1] "Llh: -1.03148896168306E+03; Pars: 4.769176E-01, 2.745428E-01, 1.904624E+00
, -1.383851E-01"
[1] "Llh: -1.03125173625942E+03; Pars: 4.855076E-01, 2.386021E-01, 1.893726E+00
, -1.433495E-01"
[1] "Llh: -1.03254303522741E+03; Pars: 4.520941E-01, 2.591163E-01, 1.854209E+00
, -5.593895E-02"
[1] "Llh: -1.03158710878183E+03; Pars: 4.685070E-01, 2.385885E-01, 1.866999E+00
, -9.401481E-02"
[1] "Llh: -1.03144743422597E+03; Pars: 4.794126E-01, 2.570130E-01, 1.944347E+00
, -1.098734E-01"
[1] "Llh: -1.03125255054349E+03; Pars: 4.805161E-01, 2.424935E-01, 1.916122E+00
, -1.159576E-01"
[1] "Llh: -1.03217384225974E+03; Pars: 4.302642E-01, 2.896811E-01, 1.983545E+00
, -1.026472E-01"
[1] "Llh: -1.03130656978450E+03; Pars: 4.951076E-01, 2.161771E-01, 1.872052E+00

, -1.253694E-01"
[1] "Llh: -1.03132257979070E+03; Pars: 4.898149E-01, 2.315627E-01, 1.953566E+00
, -1.572532E-01"
[1] "Llh: -1.03120173559804E+03; Pars: 4.843987E-01, 2.333192E-01, 1.931555E+00
, -1.414436E-01"
[1] "Llh: -1.03149820054176E+03; Pars: 4.584586E-01, 2.625451E-01, 1.979014E+00
, -1.339357E-01"
[1] "Llh: -1.03120486168093E+03; Pars: 4.856794E-01, 2.277691E-01, 1.898238E+00
, -1.275110E-01"
[1] "Llh: -1.03137385310866E+03; Pars: 5.138493E-01, 2.280622E-01, 1.862572E+00
, -1.462714E-01"
[1] "Llh: -1.03121512631263E+03; Pars: 4.697625E-01, 2.392878E-01, 1.933939E+00
, -1.249624E-01"
[1] "Llh: -1.03123766585664E+03; Pars: 4.820650E-01, 2.269956E-01, 1.912430E+00
, -1.526757E-01"
[1] "Llh: -1.03120189447509E+03; Pars: 4.816773E-01, 2.308701E-01, 1.913353E+00
, -1.434962E-01"
[1] "Llh: -1.03119370505919E+03; Pars: 4.752232E-01, 2.270210E-01, 1.945049E+00
, -1.253571E-01"
[1] "Llh: -1.03127606848733E+03; Pars: 4.701630E-01, 2.212305E-01, 1.971229E+00
, -1.163608E-01"
[1] "Llh: -1.03122359294616E+03; Pars: 4.939977E-01, 2.202019E-01, 1.910068E+00
, -1.439414E-01"
[1] "Llh: -1.03118783093276E+03; Pars: 4.757075E-01, 2.345163E-01, 1.927943E+00
, -1.297072E-01"
[1] "Llh: -1.03126994308448E+03; Pars: 4.728775E-01, 2.350942E-01, 1.961159E+00
, -1.424910E-01"
[1] "Llh: -1.03118125688070E+03; Pars: 4.824468E-01, 2.296004E-01, 1.913776E+00
, -1.312560E-01"
[1] "Llh: -1.03121372523482E+03; Pars: 4.771872E-01, 2.313584E-01, 1.945882E+00
, -1.203858E-01"
[1] "Llh: -1.03118530884975E+03; Pars: 4.805508E-01, 2.309922E-01, 1.921434E+00
, -1.377186E-01"
[1] "Llh: -1.03117437558708E+03; Pars: 4.726179E-01, 2.277458E-01, 1.922488E+00
, -1.205758E-01"
[1] "Llh: -1.03118996364672E+03; Pars: 4.668354E-01, 2.249591E-01, 1.917970E+00
, -1.101419E-01"
[1] "Llh: -1.03122877236910E+03; Pars: 4.804209E-01, 2.344063E-01, 1.898046E+00
, -1.342717E-01"
[1] "Llh: -1.03117774713225E+03; Pars: 4.765173E-01, 2.288673E-01, 1.933190E+00
, -1.275857E-01"
[1] "Llh: -1.03117137738202E+03; Pars: 4.803401E-01, 2.240865E-01, 1.917490E+00
, -1.288608E-01"
[1] "Llh: -1.03117713930134E+03; Pars: 4.826733E-01, 2.188716E-01, 1.912284E+00
, -1.284377E-01"
[1] "Llh: -1.03116682141432E+03; Pars: 4.753946E-01, 2.241578E-01, 1.922011E+00
, -1.164206E-01"
[1] "Llh: -1.03117142125134E+03; Pars: 4.728373E-01, 2.207407E-01, 1.922299E+00
, -1.057717E-01"
[1] "Llh: -1.03116679444903E+03; Pars: 4.700527E-01, 2.228283E-01, 1.933848E+00

, -1.154655E-01"
[1] "Llh: -1.03117695249013E+03; Pars: 4.639755E-01, 2.194423E-01, 1.943963E+00
, -1.075703E-01"
[1] "Llh: -1.03117209997341E+03; Pars: 4.726626E-01, 2.205419E-01, 1.914753E+00
, -1.130757E-01"
[1] "Llh: -1.03116680878150E+03; Pars: 4.736234E-01, 2.226233E-01, 1.919346E+00
, -1.167032E-01"
[1] "Llh: -1.03115829058613E+03; Pars: 4.770690E-01, 2.191022E-01, 1.923839E+00
, -1.181493E-01"
[1] "Llh: -1.03115690244464E+03; Pars: 4.793102E-01, 2.147804E-01, 1.924514E+00
, -1.169360E-01"
[1] "Llh: -1.03116784783240E+03; Pars: 4.688959E-01, 2.181084E-01, 1.932383E+00
, -1.039018E-01"
[1] "Llh: -1.03116195984415E+03; Pars: 4.717311E-01, 2.196029E-01, 1.928649E+00
, -1.101416E-01"
[1] "Llh: -1.03115630827990E+03; Pars: 4.719448E-01, 2.157596E-01, 1.931164E+00
, -1.132025E-01"
[1] "Llh: -1.03115775269449E+03; Pars: 4.702292E-01, 2.115605E-01, 1.935757E+00
, -1.115935E-01"
[1] "Llh: -1.03116402838567E+03; Pars: 4.728695E-01, 2.138624E-01, 1.939790E+00
, -1.111696E-01"
[1] "Llh: -1.03115900234936E+03; Pars: 4.730579E-01, 2.160526E-01, 1.934658E+00
, -1.125530E-01"
[1] "Llh: -1.03115460346967E+03; Pars: 4.779823E-01, 2.102694E-01, 1.925646E+00
, -1.109510E-01"
[1] "Llh: -1.03116158555769E+03; Pars: 4.819971E-01, 2.039900E-01, 1.921559E+00
, -1.086938E-01"
[1] "Llh: -1.03116430561459E+03; Pars: 4.794269E-01, 2.088281E-01, 1.929334E+00
, -1.166797E-01"
[1] "Llh: -1.03115659702591E+03; Pars: 4.736434E-01, 2.169092E-01, 1.928820E+00
, -1.117761E-01"
[1] "Llh: -1.03115631006070E+03; Pars: 4.783781E-01, 2.128067E-01, 1.920437E+00
, -1.138798E-01"
[1] "Llh: -1.03115482339233E+03; Pars: 4.770425E-01, 2.136182E-01, 1.923982E+00
, -1.135481E-01"
[1] "Llh: -1.03115538633396E+03; Pars: 4.710197E-01, 2.134978E-01, 1.930292E+00
, -1.078029E-01"
[1] "Llh: -1.03115450103151E+03; Pars: 4.730788E-01, 2.138185E-01, 1.928846E+00
, -1.100862E-01"
[1] "Llh: -1.03115551000099E+03; Pars: 4.763709E-01, 2.098236E-01, 1.925996E+00
, -1.121178E-01"
[1] "Llh: -1.03115440330974E+03; Pars: 4.756876E-01, 2.115950E-01, 1.926702E+00
, -1.120324E-01"
[1] "Llh: -1.03115574659277E+03; Pars: 4.799775E-01, 2.088909E-01, 1.921435E+00
, -1.101063E-01"
[1] "Llh: -1.03115439855917E+03; Pars: 4.779566E-01, 2.106081E-01, 1.923863E+00
, -1.108804E-01"
[1] "Llh: -1.03115397403967E+03; Pars: 4.753032E-01, 2.095273E-01, 1.928547E+00
, -1.084269E-01"
[1] "Llh: -1.03115494813188E+03; Pars: 4.744359E-01, 2.074819E-01, 1.930834E+00

, -1.058662E-01"
[1] "Llh: -1.03115396118566E+03; Pars: 4.730374E-01, 2.125051E-01, 1.928332E+00
, -1.097619E-01"
[1] "Llh: -1.03115514321869E+03; Pars: 4.705841E-01, 2.136229E-01, 1.929676E+00
, -1.091673E-01"
[1] "Llh: -1.03115577145820E+03; Pars: 4.779195E-01, 2.082993E-01, 1.924876E+00
, -1.104646E-01"
[1] "Llh: -1.03115382486242E+03; Pars: 4.742843E-01, 2.124387E-01, 1.927853E+00
, -1.101808E-01"
[1] "Llh: -1.03115344689206E+03; Pars: 4.745969E-01, 2.109446E-01, 1.927594E+00
, -1.075926E-01"
[1] "Llh: -1.03115377985411E+03; Pars: 4.740525E-01, 2.106193E-01, 1.928040E+00
, -1.053726E-01"
[1] "Llh: -1.03115537849208E+03; Pars: 4.706808E-01, 2.120997E-01, 1.932309E+00
, -1.071006E-01"
[1] "Llh: -1.03115368859552E+03; Pars: 4.761272E-01, 2.109810E-01, 1.925971E+00
, -1.099354E-01"
[1] "Llh: -1.03115434869432E+03; Pars: 4.737185E-01, 2.139073E-01, 1.926327E+00
, -1.103084E-01"
[1] "Llh: -1.03115364369294E+03; Pars: 4.749065E-01, 2.106223E-01, 1.927992E+00
, -1.088973E-01"
[1] "Llh: -1.03115364365142E+03; Pars: 4.769270E-01, 2.099882E-01, 1.926373E+00
, -1.085412E-01"
[1] "Llh: -1.03115352675310E+03; Pars: 4.759516E-01, 2.106174E-01, 1.926863E+00
, -1.088463E-01"
[1] "Llh: -1.03115359424937E+03; Pars: 4.765085E-01, 2.091440E-01, 1.926357E+00
, -1.074550E-01"
[1] "Llh: -1.03115349164099E+03; Pars: 4.759515E-01, 2.099677E-01, 1.926731E+00
, -1.081365E-01"
[1] "Llh: -1.03115359093695E+03; Pars: 4.745766E-01, 2.100950E-01, 1.928620E+00
, -1.068009E-01"
[1] "Llh: -1.03115348802714E+03; Pars: 4.749637E-01, 2.103165E-01, 1.927957E+00
, -1.075845E-01"
[1] "Llh: -1.03115332737873E+03; Pars: 4.758250E-01, 2.103007E-01, 1.926580E+00
, -1.071827E-01"
[1] "Llh: -1.03115332717353E+03; Pars: 4.762850E-01, 2.101400E-01, 1.925874E+00
, -1.063254E-01"
[1] "Llh: -1.03115341438830E+03; Pars: 4.749464E-01, 2.100669E-01, 1.927215E+00
, -1.059731E-01"
[1] "Llh: -1.03115336146815E+03; Pars: 4.751975E-01, 2.102045E-01, 1.927127E+00
, -1.066914E-01"
[1] "Llh: -1.03115362040944E+03; Pars: 4.745703E-01, 2.108351E-01, 1.927545E+00
, -1.059605E-01"
[1] "Llh: -1.03115337918385E+03; Pars: 4.756058E-01, 2.101845E-01, 1.926934E+00
, -1.075925E-01"
[1] "Llh: -1.03115333098993E+03; Pars: 4.758785E-01, 2.104203E-01, 1.925808E+00
, -1.065164E-01"
[1] "Llh: -1.03115331823555E+03; Pars: 4.756496E-01, 2.103943E-01, 1.926345E+00
, -1.067834E-01"
[1] "Llh: -1.03115335661609E+03; Pars: 4.767742E-01, 2.095171E-01, 1.925547E+00

, -1.061038E-01"
[1] "Llh: -1.03115331843227E+03; Pars: 4.762290E-01, 2.098740E-01, 1.926058E+00
, -1.064760E-01"
[1] "Llh: -1.03115341882228E+03; Pars: 4.760745E-01, 2.101219E-01, 1.925768E+00
, -1.055456E-01"
[1] "Llh: -1.03115332817709E+03; Pars: 4.757229E-01, 2.101689E-01, 1.926643E+00
, -1.070808E-01"
[1] "Llh: -1.03115332522192E+03; Pars: 4.767468E-01, 2.100840E-01, 1.925334E+00
, -1.066413E-01"
[1] "Llh: -1.03115331053357E+03; Pars: 4.763590E-01, 2.101142E-01, 1.925782E+00
, -1.066539E-01"
[1] "Llh: -1.03115335534494E+03; Pars: 4.765386E-01, 2.100924E-01, 1.925387E+00
, -1.060386E-01"
[1] "Llh: -1.03115331243401E+03; Pars: 4.759267E-01, 2.101497E-01, 1.926329E+00
, -1.068202E-01"
[1] "Llh: -1.03115331376606E+03; Pars: 4.757972E-01, 2.101262E-01, 1.926383E+00
, -1.070414E-01"
[1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
[1] "Llh: -1.03115338684653E+03; Pars: 4.768719E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
[1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
[1] "Llh: -1.03115345341085E+03; Pars: 4.763952E-01, 2.111296E-01, 1.926256E+00
, -1.068624E-01"
[1] "Llh: -1.03115347189602E+03; Pars: 4.763952E-01, 2.091296E-01, 1.926256E+00
, -1.068624E-01"
[1] "Llh: -1.03115374339330E+03; Pars: 4.763952E-01, 2.101296E-01, 1.928183E+00
, -1.068624E-01"
[1] "Llh: -1.03115341965699E+03; Pars: 4.763952E-01, 2.101296E-01, 1.924330E+00
, -1.068624E-01"
[1] "Llh: -1.03115340516397E+03; Pars: 4.763952E-01, 2.101296E-01, 1.926256E+00
, -1.058624E-01"
[1] "Llh: -1.03115340479314E+03; Pars: 4.763952E-01, 2.101296E-01, 1.926256E+00
, -1.078624E-01"
[1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
[1] "Llh: -1.0311533451464E+03; Pars: 4.749682E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
[1] "Llh: -1.03115342922820E+03; Pars: 4.754434E-01, 2.111296E-01, 1.926256E+00
, -1.068624E-01"
[1] "Llh: -1.03115344385162E+03; Pars: 4.754434E-01, 2.091296E-01, 1.926256E+00
, -1.068624E-01"
[1] "Llh: -1.03115356593817E+03; Pars: 4.754434E-01, 2.101296E-01, 1.928183E+00
, -1.068624E-01"
[1] "Llh: -1.03115354458018E+03; Pars: 4.754434E-01, 2.101296E-01, 1.924330E+00
, -1.068624E-01"
[1] "Llh: -1.03115337758112E+03; Pars: 4.754434E-01, 2.101296E-01, 1.926256E+00
, -1.058624E-01"
[1] "Llh: -1.03115338000649E+03; Pars: 4.754434E-01, 2.101296E-01, 1.926256E+00

```
, -1.078624E-01"
## [1] "Llh: -1.03115345341085E+03; Pars: 4.763952E-01, 2.111296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115342922820E+03; Pars: 4.754434E-01, 2.111296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115380435095E+03; Pars: 4.759191E-01, 2.121296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115377926371E+03; Pars: 4.759191E-01, 2.111296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115357102391E+03; Pars: 4.759191E-01, 2.111296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115363933324E+03; Pars: 4.759191E-01, 2.111296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115335800132E+03; Pars: 4.759191E-01, 2.111296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115347189602E+03; Pars: 4.763952E-01, 2.091296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115344385162E+03; Pars: 4.754434E-01, 2.091296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115383746477E+03; Pars: 4.759191E-01, 2.081296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115375993662E+03; Pars: 4.759191E-01, 2.091296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115362357194E+03; Pars: 4.759191E-01, 2.091296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115337352272E+03; Pars: 4.759191E-01, 2.091296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115365691482E+03; Pars: 4.759191E-01, 2.091296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115374339330E+03; Pars: 4.763952E-01, 2.101296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115356593817E+03; Pars: 4.754434E-01, 2.101296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115377926371E+03; Pars: 4.759191E-01, 2.111296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115375993662E+03; Pars: 4.759191E-01, 2.091296E-01, 1.928183E+00
, -1.068624E-01"
## [1] "Llh: -1.03115446836283E+03; Pars: 4.759191E-01, 2.101296E-01, 1.930112E+00
, -1.068624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115372160666E+03; Pars: 4.759191E-01, 2.101296E-01, 1.928183E+00
, -1.058624E-01"
## [1] "Llh: -1.03115370208300E+03; Pars: 4.759191E-01, 2.101296E-01, 1.928183E+00
, -1.078624E-01"
## [1] "Llh: -1.03115341965699E+03; Pars: 4.763952E-01, 2.101296E-01, 1.924330E+00
```

```

, -1.068624E-01"
## [1] "Llh: -1.03115354458018E+03; Pars: 4.754434E-01, 2.101296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115357102391E+03; Pars: 4.759191E-01, 2.111296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115362357194E+03; Pars: 4.759191E-01, 2.091296E-01, 1.924330E+00
, -1.068624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115412381710E+03; Pars: 4.759191E-01, 2.101296E-01, 1.922407E+00
, -1.068624E-01"
## [1] "Llh: -1.03115352878980E+03; Pars: 4.759191E-01, 2.101296E-01, 1.924330E+00
, -1.058624E-01"
## [1] "Llh: -1.03115355047563E+03; Pars: 4.759191E-01, 2.101296E-01, 1.924330E+00
, -1.078624E-01"
## [1] "Llh: -1.03115340516397E+03; Pars: 4.763952E-01, 2.101296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115337758112E+03; Pars: 4.754434E-01, 2.101296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115363933324E+03; Pars: 4.759191E-01, 2.111296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115337352272E+03; Pars: 4.759191E-01, 2.091296E-01, 1.926256E+00
, -1.058624E-01"
## [1] "Llh: -1.03115372160666E+03; Pars: 4.759191E-01, 2.101296E-01, 1.928183E+00
, -1.058624E-01"
## [1] "Llh: -1.03115352878980E+03; Pars: 4.759191E-01, 2.101296E-01, 1.924330E+00
, -1.058624E-01"
## [1] "Llh: -1.03115358905767E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.048624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115340479314E+03; Pars: 4.763952E-01, 2.101296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115338000649E+03; Pars: 4.754434E-01, 2.101296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115335800132E+03; Pars: 4.759191E-01, 2.111296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115365691482E+03; Pars: 4.759191E-01, 2.091296E-01, 1.926256E+00
, -1.078624E-01"
## [1] "Llh: -1.03115370208300E+03; Pars: 4.759191E-01, 2.101296E-01, 1.928183E+00
, -1.078624E-01"
## [1] "Llh: -1.03115355047563E+03; Pars: 4.759191E-01, 2.101296E-01, 1.924330E+00
, -1.078624E-01"
## [1] "Llh: -1.03115330839907E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.068624E-01"
## [1] "Llh: -1.03115359107412E+03; Pars: 4.759191E-01, 2.101296E-01, 1.926256E+00
, -1.088624E-01"
## Currently fitting: asymmetric VG
## [1] "Llh: -1.07106376785753E+03; Pars: 1.000000E+00, 1.733995E-01, 1.320976E+00
, 0.000000E+00"

```

```

## [1] "Llh: -1.07074278933973E+03; Pars: 1.028228E+00, 1.733995E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.07122847850364E+03; Pars: 1.000000E+00, 2.012366E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.06528138695051E+03; Pars: 1.000000E+00, 1.733995E-01, 1.358265E+00
, 0.000000E+00"
## [1] "Llh: -1.07179175618344E+03; Pars: 1.000000E+00, 1.733995E-01, 1.320976E+00
, 2.783709E-02"
## [1] "Llh: -1.06740918840407E+03; Pars: 1.014016E+00, 1.873181E-01, 1.339491E+00
, -2.783709E-02"
## [1] "Llh: -1.06841853894967E+03; Pars: 1.010494E+00, 1.838384E-01, 1.334838E+00
, -1.391855E-02"
## [1] "Llh: -1.06630536931290E+03; Pars: 1.021097E+00, 1.525217E-01, 1.348845E+00
, -1.391855E-02"
## [1] "Llh: -1.06738831446904E+03; Pars: 1.015782E+00, 1.647004E-01, 1.341823E+00
, -1.043891E-02"
## [1] "Llh: -1.06390752321835E+03; Pars: 1.031812E+00, 1.699199E-01, 1.362999E+00
, -2.087782E-02"
## [1] "Llh: -1.06069466139887E+03; Pars: 1.048096E+00, 1.681800E-01, 1.384510E+00
, -3.131673E-02"
## [1] "Llh: -1.05963284119421E+03; Pars: 1.013134E+00, 1.673101E-01, 1.395392E+00
, -3.653619E-02"
## [1] "Llh: -1.05511182135156E+03; Pars: 1.005670E+00, 1.642655E-01, 1.434157E+00
, -5.480428E-02"
## [1] "Llh: -1.05649007736285E+03; Pars: 1.023098E+00, 1.418653E-01, 1.423901E+00
, -2.218268E-02"
## [1] "Llh: -1.05889796613314E+03; Pars: 1.020820E+00, 1.532285E-01, 1.402313E+00
, -2.359629E-02"
## [1] "Llh: -1.05292504165804E+03; Pars: 1.016997E+00, 1.713335E-01, 1.452836E+00
, -4.023330E-02"
## [1] "Llh: -1.04769888269322E+03; Pars: 1.014954E+00, 1.807394E-01, 1.507800E+00
, -5.339068E-02"
## [1] "Llh: -1.04687639583107E+03; Pars: 1.046189E+00, 1.541256E-01, 1.520105E+00
, -8.084718E-02"
## [1] "Llh: -1.04175135958978E+03; Pars: 1.070077E+00, 1.444886E-01, 1.608120E+00
, -1.212708E-01"
## [1] "Llh: -1.04184576508616E+03; Pars: 1.008593E+00, 1.474993E-01, 1.607213E+00
, -9.450748E-02"
## [1] "Llh: -1.04506895960524E+03; Pars: 1.018327E+00, 1.526695E-01, 1.548385E+00
, -7.870979E-02"
## [1] "Llh: -1.03904555684082E+03; Pars: 1.025886E+00, 1.766311E-01, 1.660298E+00
, -1.398039E-01"
## [1] "Llh: -1.03613137140751E+03; Pars: 1.027283E+00, 1.940140E-01, 1.792831E+00
, -1.986145E-01"
## [1] "Llh: -1.03596598933083E+03; Pars: 1.054819E+00, 1.691052E-01, 1.843065E+00
, -1.790875E-01"
## [1] "Llh: -1.04035782542804E+03; Pars: 1.080287E+00, 1.715250E-01, 2.089356E+00
, -2.412290E-01"
## [1] "Llh: -1.03839733248700E+03; Pars: 1.065500E+00, 1.468142E-01, 1.938171E+00
, -2.433494E-01"

```

```

## [1] "Llh: -1.03686687655097E+03; Pars: 1.052632E+00, 1.552955E-01, 1.820246E+00
, -1.958598E-01"
## [1] "Llh: -1.03737407577432E+03; Pars: 1.095378E+00, 1.839523E-01, 1.935043E+00
, -2.529088E-01"
## [1] "Llh: -1.03643761323196E+03; Pars: 1.073006E+00, 1.748391E-01, 1.847296E+00
, -2.133085E-01"
## [1] "Llh: -1.03939428741001E+03; Pars: 1.033852E+00, 2.021382E-01, 2.072787E+00
, -2.721643E-01"
## [1] "Llh: -1.03683284716147E+03; Pars: 1.042792E+00, 1.877258E-01, 1.945341E+00
, -2.344409E-01"
## [1] "Llh: -1.03568112126196E+03; Pars: 1.046062E+00, 2.075465E-01, 1.893110E+00
, -2.168659E-01"
## [1] "Llh: -1.03565175475302E+03; Pars: 1.042792E+00, 2.336721E-01, 1.930629E+00
, -2.273690E-01"
## [1] "Llh: -1.03596754588712E+03; Pars: 1.055933E+00, 1.980893E-01, 1.764664E+00
, -1.747488E-01"
## [1] "Llh: -1.03569458211304E+03; Pars: 1.052632E+00, 1.954984E-01, 1.808195E+00
, -1.896718E-01"
## [1] "Llh: -1.03509029044373E+03; Pars: 1.016411E+00, 2.213058E-01, 1.838551E+00
, -1.840630E-01"
## [1] "Llh: -1.03489817671385E+03; Pars: 9.892430E-01, 2.445391E-01, 1.834194E+00
, -1.694402E-01"
## [1] "Llh: -1.03514511716090E+03; Pars: 1.041807E+00, 2.273934E-01, 1.916134E+00
, -1.841697E-01"
## [1] "Llh: -1.03508637244583E+03; Pars: 1.038157E+00, 2.190486E-01, 1.884535E+00
, -1.877809E-01"
## [1] "Llh: -1.03463104607521E+03; Pars: 1.006566E+00, 2.772739E-01, 1.884761E+00
, -2.080436E-01"
## [1] "Llh: -1.03449369200416E+03; Pars: 9.832732E-01, 3.313583E-01, 1.905962E+00
, -2.225216E-01"
## [1] "Llh: -1.03516631913872E+03; Pars: 9.748601E-01, 3.188106E-01, 1.972359E+00
, -2.138841E-01"
## [1] "Llh: -1.03482498684155E+03; Pars: 9.937471E-01, 2.879826E-01, 1.929971E+00
, -2.078310E-01"
## [1] "Llh: -1.03458948958323E+03; Pars: 9.606395E-01, 3.077922E-01, 1.846963E+00
, -1.664179E-01"
## [1] "Llh: -1.03450943379814E+03; Pars: 9.805500E-01, 2.892622E-01, 1.867534E+00
, -1.816557E-01"
## [1] "Llh: -1.03476946488538E+03; Pars: 9.377742E-01, 3.575225E-01, 1.883585E+00
, -2.029433E-01"
## [1] "Llh: -1.03445553456415E+03; Pars: 9.619212E-01, 3.229040E-01, 1.883822E+00
, -1.991527E-01"
## [1] "Llh: -1.03531523170625E+03; Pars: 9.704579E-01, 3.712144E-01, 1.961288E+00
, -2.361403E-01"
## [1] "Llh: -1.03460244908011E+03; Pars: 9.845129E-01, 2.762080E-01, 1.865174E+00
, -1.861152E-01"
## [1] "Llh: -1.03456663992857E+03; Pars: 9.615603E-01, 3.218837E-01, 1.832399E+00
, -1.868916E-01"
## [1] "Llh: -1.03442266024524E+03; Pars: 9.695080E-01, 3.134084E-01, 1.856320E+00
, -1.921265E-01"

```

```

## [1] "Llh: -1.03460723666572E+03; Pars: 9.631546E-01, 3.522585E-01, 1.891552E+00
, -2.116130E-01"
## [1] "Llh: -1.03446237852203E+03; Pars: 9.791293E-01, 2.952206E-01, 1.871734E+00
, -1.924897E-01"
## [1] "Llh: -1.03447939399217E+03; Pars: 9.663464E-01, 3.421835E-01, 1.891285E+00
, -2.214896E-01"
## [1] "Llh: -1.03442638740122E+03; Pars: 9.698779E-01, 3.289532E-01, 1.885319E+00
, -2.115311E-01"
## [1] "Llh: -1.03459951323859E+03; Pars: 9.570834E-01, 2.988848E-01, 1.843091E+00
, -1.751284E-01"
## [1] "Llh: -1.03441692775802E+03; Pars: 9.766593E-01, 3.232399E-01, 1.890046E+00
, -2.106733E-01"
## [1] "Llh: -1.03454815511480E+03; Pars: 9.599209E-01, 3.490322E-01, 1.885953E+00
, -2.142521E-01"
## [1] "Llh: -1.03440945824229E+03; Pars: 9.742915E-01, 3.086735E-01, 1.875278E+00
, -1.979303E-01"
## [1] "Llh: -1.03435432890675E+03; Pars: 9.833559E-01, 3.142335E-01, 1.869597E+00
, -2.069779E-01"
## [1] "Llh: -1.03434496645476E+03; Pars: 9.942517E-01, 3.098982E-01, 1.862524E+00
, -2.108904E-01"
## [1] "Llh: -1.03441172888176E+03; Pars: 9.874675E-01, 2.986568E-01, 1.856785E+00
, -1.942791E-01"
## [1] "Llh: -1.03438233668191E+03; Pars: 9.830404E-01, 3.062309E-01, 1.863878E+00
, -1.985921E-01"
## [1] "Llh: -1.03440545368584E+03; Pars: 9.947146E-01, 3.106128E-01, 1.889626E+00
, -2.169166E-01"
## [1] "Llh: -1.03437748983155E+03; Pars: 9.883521E-01, 3.113117E-01, 1.881244E+00
, -2.107191E-01"
## [1] "Llh: -1.03443343687384E+03; Pars: 9.933243E-01, 2.948172E-01, 1.851581E+00
, -1.983926E-01"
## [1] "Llh: -1.03437470031265E+03; Pars: 9.807992E-01, 3.161343E-01, 1.880355E+00
, -2.076031E-01"
## [1] "Llh: -1.03433190163290E+03; Pars: 9.990584E-01, 3.131140E-01, 1.868686E+00
, -2.159721E-01"
## [1] "Llh: -1.03431845720703E+03; Pars: 1.011677E+00, 3.153343E-01, 1.865399E+00
, -2.249930E-01"
## [1] "Llh: -1.03435413068321E+03; Pars: 1.004485E+00, 3.201083E-01, 1.880884E+00
, -2.285107E-01"
## [1] "Llh: -1.03434005427711E+03; Pars: 9.990807E-01, 3.166390E-01, 1.876618E+00
, -2.210310E-01"
## [1] "Llh: -1.03431197884270E+03; Pars: 1.004495E+00, 3.176911E-01, 1.861228E+00
, -2.215397E-01"
## [1] "Llh: -1.03430922151718E+03; Pars: 1.012665E+00, 3.208808E-01, 1.851300E+00
, -2.269500E-01"
## [1] "Llh: -1.03433486812637E+03; Pars: 1.028542E+00, 3.152419E-01, 1.847665E+00
, -2.343291E-01"
## [1] "Llh: -1.03431566191674E+03; Pars: 1.016393E+00, 3.154650E-01, 1.855784E+00
, -2.276476E-01"
## [1] "Llh: -1.03432610422910E+03; Pars: 1.025861E+00, 3.242614E-01, 1.861975E+00
, -2.394204E-01"

```

```

## [1] "Llh: -1.03431576486009E+03; Pars: 1.017866E+00, 3.206706E-01, 1.862113E+00
, -2.322879E-01"
## [1] "Llh: -1.03433306368020E+03; Pars: 1.030455E+00, 3.195364E-01, 1.840836E+00
, -2.349082E-01"
## [1] "Llh: -1.03431579196151E+03; Pars: 1.022521E+00, 3.188120E-01, 1.849717E+00
, -2.314389E-01"
## [1] "Llh: -1.03432163726309E+03; Pars: 1.023065E+00, 3.225799E-01, 1.844107E+00
, -2.341693E-01"
## [1] "Llh: -1.03431197222360E+03; Pars: 1.014512E+00, 3.171457E-01, 1.860053E+00
, -2.272871E-01"
## [1] "Llh: -1.03431562660862E+03; Pars: 1.008243E+00, 3.182690E-01, 1.864930E+00
, -2.256474E-01"
## [1] "Llh: -1.03431212706039E+03; Pars: 1.011794E+00, 3.184048E-01, 1.861115E+00
, -2.270953E-01"
## [1] "Llh: -1.03431405243332E+03; Pars: 1.009829E+00, 3.152776E-01, 1.852019E+00
, -2.222021E-01"
## [1] "Llh: -1.03431069411288E+03; Pars: 1.011832E+00, 3.166258E-01, 1.854537E+00
, -2.247235E-01"
## [1] "Llh: -1.03430753205571E+03; Pars: 1.009021E+00, 3.210636E-01, 1.857710E+00
, -2.253803E-01"
## [1] "Llh: -1.03430970263272E+03; Pars: 1.005355E+00, 3.238629E-01, 1.858674E+00
, -2.242467E-01"
## [1] "Llh: -1.03430954799370E+03; Pars: 1.012217E+00, 3.194532E-01, 1.850694E+00
, -2.250752E-01"
## [1] "Llh: -1.03430861189165E+03; Pars: 1.012111E+00, 3.191911E-01, 1.853294E+00
, -2.255802E-01"
## [1] "Llh: -1.03431281444275E+03; Pars: 1.008310E+00, 3.217349E-01, 1.848383E+00
, -2.240300E-01"
## [1] "Llh: -1.03430929450600E+03; Pars: 1.012958E+00, 3.182930E-01, 1.857129E+00
, -2.264728E-01"
## [1] "Llh: -1.03430679168149E+03; Pars: 1.011543E+00, 3.230884E-01, 1.855176E+00
, -2.274682E-01"
## [1] "Llh: -1.03430773642856E+03; Pars: 1.011398E+00, 3.263197E-01, 1.855495E+00
, -2.288405E-01"
## [1] "Llh: -1.03430928578511E+03; Pars: 1.009713E+00, 3.238189E-01, 1.851612E+00
, -2.262166E-01"
## [1] "Llh: -1.03430746613372E+03; Pars: 1.010523E+00, 3.224375E-01, 1.852990E+00
, -2.262806E-01"
## [1] "Llh: -1.03430654081501E+03; Pars: 1.008936E+00, 3.220095E-01, 1.858289E+00
, -2.254047E-01"
## [1] "Llh: -1.03430887084401E+03; Pars: 1.007077E+00, 3.225738E-01, 1.861794E+00
, -2.246320E-01"
## [1] "Llh: -1.03430903528504E+03; Pars: 1.007903E+00, 3.251084E-01, 1.858790E+00
, -2.266867E-01"
## [1] "Llh: -1.03430732924848E+03; Pars: 1.011058E+00, 3.206704E-01, 1.854667E+00
, -2.258568E-01"
## [1] "Llh: -1.03430706646498E+03; Pars: 1.012010E+00, 3.230393E-01, 1.852852E+00
, -2.271248E-01"
## [1] "Llh: -1.03430660939908E+03; Pars: 1.011262E+00, 3.225454E-01, 1.854065E+00
, -2.266887E-01"

```

```
## [1] "Llh: -1.03430632571892E+03; Pars: 1.010875E+00, 3.217194E-01, 1.858110E+00  
, -2.264285E-01"  
## [1] "Llh: -1.03430754307326E+03; Pars: 1.011051E+00, 3.213603E-01, 1.860676E+00  
, -2.265025E-01"  
## [1] "Llh: -1.03430724702435E+03; Pars: 1.010250E+00, 3.240109E-01, 1.858154E+00  
, -2.271382E-01"  
## [1] "Llh: -1.03430669071609E+03; Pars: 1.010452E+00, 3.231758E-01, 1.857281E+00  
, -2.268179E-01"  
## [1] "Llh: -1.03430656441323E+03; Pars: 1.009220E+00, 3.216366E-01, 1.858698E+00  
, -2.252017E-01"  
## [1] "Llh: -1.03430612072637E+03; Pars: 1.009800E+00, 3.219995E-01, 1.857817E+00  
, -2.257683E-01"  
## [1] "Llh: -1.03430674280451E+03; Pars: 1.009985E+00, 3.209611E-01, 1.856858E+00  
, -2.253273E-01"  
## [1] "Llh: -1.03430638467806E+03; Pars: 1.010335E+00, 3.226221E-01, 1.857175E+00  
, -2.264452E-01"  
## [1] "Llh: -1.03430826267314E+03; Pars: 1.008712E+00, 3.216299E-01, 1.861638E+00  
, -2.253347E-01"  
## [1] "Llh: -1.03430615993197E+03; Pars: 1.010624E+00, 3.223165E-01, 1.855956E+00  
, -2.263502E-01"  
## [1] "Llh: -1.03430590446690E+03; Pars: 1.011883E+00, 3.223193E-01, 1.856240E+00  
, -2.270915E-01"  
## [1] "Llh: -1.03430598211006E+03; Pars: 1.013360E+00, 3.224742E-01, 1.855216E+00  
, -2.279349E-01"  
## [1] "Llh: -1.03430611928111E+03; Pars: 1.011256E+00, 3.215552E-01, 1.856885E+00  
, -2.263741E-01"  
## [1] "Llh: -1.03430598486453E+03; Pars: 1.011026E+00, 3.218220E-01, 1.856958E+00  
, -2.263918E-01"  
## [1] "Llh: -1.03430618219577E+03; Pars: 1.010791E+00, 3.225093E-01, 1.855375E+00  
, -2.263724E-01"  
## [1] "Llh: -1.03430601447687E+03; Pars: 1.010812E+00, 3.223118E-01, 1.856059E+00  
, -2.263864E-01"  
## [1] "Llh: -1.03430587168794E+03; Pars: 1.011136E+00, 3.219098E-01, 1.857581E+00  
, -2.264688E-01"  
## [1] "Llh: -1.03430609103940E+03; Pars: 1.011392E+00, 3.217064E-01, 1.858394E+00  
, -2.265282E-01"  
## [1] "Llh: -1.03430581498493E+03; Pars: 1.012630E+00, 3.221819E-01, 1.855602E+00  
, -2.274010E-01"  
## [1] "Llh: -1.03430610175490E+03; Pars: 1.014048E+00, 3.222731E-01, 1.854496E+00  
, -2.282173E-01"  
## [1] "Llh: -1.03430592430854E+03; Pars: 1.012526E+00, 3.218047E-01, 1.857132E+00  
, -2.272901E-01"  
## [1] "Llh: -1.03430579397859E+03; Pars: 1.012097E+00, 3.219315E-01, 1.856863E+00  
, -2.270642E-01"  
## [1] "Llh: -1.03430581050855E+03; Pars: 1.012848E+00, 3.223493E-01, 1.856185E+00  
, -2.276209E-01"  
## [1] "Llh: -1.03430576768535E+03; Pars: 1.012392E+00, 3.222174E-01, 1.856378E+00  
, -2.273136E-01"  
## [1] "Llh: -1.03430581190799E+03; Pars: 1.012244E+00, 3.218010E-01, 1.856972E+00  
, -2.270323E-01"
```

```

## [1] "Llh: -1.03430573179345E+03; Pars: 1.012154E+00, 3.219306E-01, 1.856789E+00
, -2.270471E-01"
## [1] "Llh: -1.03430593339090E+03; Pars: 1.013502E+00, 3.222209E-01, 1.855236E+00
, -2.279441E-01"
## [1] "Llh: -1.03430572780134E+03; Pars: 1.011727E+00, 3.219876E-01, 1.856994E+00
, -2.268377E-01"
## [1] "Llh: -1.03430595074412E+03; Pars: 1.011555E+00, 3.218516E-01, 1.857911E+00
, -2.267303E-01"
## [1] "Llh: -1.03430572656615E+03; Pars: 1.012361E+00, 3.220993E-01, 1.856179E+00
, -2.272333E-01"
## [1] "Llh: -1.03430571101859E+03; Pars: 1.012220E+00, 3.221860E-01, 1.856307E+00
, -2.271517E-01"
## [1] "Llh: -1.03430574094162E+03; Pars: 1.012281E+00, 3.223133E-01, 1.856029E+00
, -2.271954E-01"
## [1] "Llh: -1.03430576353593E+03; Pars: 1.011839E+00, 3.218843E-01, 1.856757E+00
, -2.268212E-01"
## [1] "Llh: -1.03430570061623E+03; Pars: 1.011977E+00, 3.219676E-01, 1.856662E+00
, -2.269443E-01"
## [1] "Llh: -1.03430575627896E+03; Pars: 1.011989E+00, 3.221897E-01, 1.856282E+00
, -2.270364E-01"
## [1] "Llh: -1.03430568113627E+03; Pars: 1.012113E+00, 3.219953E-01, 1.856662E+00
, -2.270444E-01"
## [1] "Llh: -1.03430571379983E+03; Pars: 1.012609E+00, 3.221365E-01, 1.855911E+00
, -2.273492E-01"
## [1] "Llh: -1.03430568963245E+03; Pars: 1.012388E+00, 3.220993E-01, 1.856182E+00
, -2.272213E-01"
## [1] "Llh: -1.03430562201749E+03; Pars: 1.011988E+00, 3.220248E-01, 1.856728E+00
, -2.269476E-01"
## [1] "Llh: -1.03430562835305E+03; Pars: 1.011801E+00, 3.219875E-01, 1.857002E+00
, -2.268047E-01"
## [1] "Llh: -1.03430578942835E+03; Pars: 1.012013E+00, 3.218575E-01, 1.856810E+00
, -2.269272E-01"
## [1] "Llh: -1.03430567699284E+03; Pars: 1.012168E+00, 3.221039E-01, 1.856433E+00
, -2.270955E-01"
## [1] "Llh: -1.03430568106657E+03; Pars: 1.012351E+00, 3.221441E-01, 1.856340E+00
, -2.272101E-01"
## [1] "Llh: -1.03430566791205E+03; Pars: 1.012258E+00, 3.220999E-01, 1.856421E+00
, -2.271436E-01"
## [1] "Llh: -1.03430564787314E+03; Pars: 1.011875E+00, 3.220127E-01, 1.856940E+00
, -2.268943E-01"
## [1] "Llh: -1.03430564264011E+03; Pars: 1.012003E+00, 3.220343E-01, 1.856750E+00
, -2.269760E-01"
## [1] "Llh: -1.03430565250371E+03; Pars: 1.012096E+00, 3.221361E-01, 1.856503E+00
, -2.270370E-01"
## [1] "Llh: -1.03430565117691E+03; Pars: 1.012100E+00, 3.221009E-01, 1.856543E+00
, -2.270388E-01"
## [1] "Llh: -1.03430561645053E+03; Pars: 1.012006E+00, 3.220261E-01, 1.856788E+00
, -2.269575E-01"
## [1] "Llh: -1.03430563344406E+03; Pars: 1.011925E+00, 3.219872E-01, 1.856966E+00
, -2.268885E-01"

```

```

## [1] "Llh: -1.03430564362891E+03; Pars: 1.011791E+00, 3.219931E-01, 1.856984E+00
, -2.268163E-01"
## [1] "Llh: -1.03430562078117E+03; Pars: 1.011908E+00, 3.220198E-01, 1.856843E+00
, -2.268981E-01"
## [1] "Llh: -1.03430569066633E+03; Pars: 1.011852E+00, 3.219516E-01, 1.857012E+00
, -2.268508E-01"
## [1] "Llh: -1.03430563698427E+03; Pars: 1.012038E+00, 3.220636E-01, 1.856660E+00
, -2.269918E-01"
## [1] "Llh: -1.03430560415967E+03; Pars: 1.011967E+00, 3.220328E-01, 1.856759E+00
, -2.269215E-01"
## [1] "Llh: -1.03430558510302E+03; Pars: 1.011948E+00, 3.220321E-01, 1.856764E+00
, -2.268942E-01"
## [1] "Llh: -1.03430562609984E+03; Pars: 1.011887E+00, 3.219878E-01, 1.856901E+00
, -2.268569E-01"
## [1] "Llh: -1.03430561494799E+03; Pars: 1.011925E+00, 3.220068E-01, 1.856841E+00
, -2.268906E-01"
## [1] "Llh: -1.03430559228292E+03; Pars: 1.011906E+00, 3.220176E-01, 1.856890E+00
, -2.268727E-01"
## [1] "Llh: -1.03430559809811E+03; Pars: 1.011926E+00, 3.220194E-01, 1.856850E+00
, -2.268914E-01"
## [1] "Llh: -1.03430557425039E+03; Pars: 1.011985E+00, 3.220215E-01, 1.856798E+00
, -2.269094E-01"
## [1] "Llh: -1.03430555158576E+03; Pars: 1.012023E+00, 3.220223E-01, 1.856776E+00
, -2.269150E-01"
## [1] "Llh: -1.03430555447564E+03; Pars: 1.011895E+00, 3.220133E-01, 1.856847E+00
, -2.268287E-01"
## [1] "Llh: -1.03430556807367E+03; Pars: 1.011923E+00, 3.220165E-01, 1.856832E+00
, -2.268609E-01"
## [1] "Llh: -1.03430553672897E+03; Pars: 1.011961E+00, 3.220359E-01, 1.856797E+00
, -2.268647E-01"
## [1] "Llh: -1.03430550628264E+03; Pars: 1.011980E+00, 3.220504E-01, 1.856776E+00
, -2.268517E-01"
## [1] "Llh: -1.03430550650554E+03; Pars: 1.012017E+00, 3.220414E-01, 1.856691E+00
, -2.268721E-01"
## [1] "Llh: -1.03430552652295E+03; Pars: 1.011989E+00, 3.220355E-01, 1.856741E+00
, -2.268723E-01"
## [1] "Llh: -1.03430546934256E+03; Pars: 1.012009E+00, 3.220316E-01, 1.856781E+00
, -2.268396E-01"
## [1] "Llh: -1.03430541175479E+03; Pars: 1.012039E+00, 3.220314E-01, 1.856790E+00
, -2.268122E-01"
## [1] "Llh: -1.03430544329976E+03; Pars: 1.012135E+00, 3.220595E-01, 1.856669E+00
, -2.268968E-01"
## [1] "Llh: -1.03430546831340E+03; Pars: 1.012075E+00, 3.220479E-01, 1.856714E+00
, -2.268798E-01"
## [1] "Llh: -1.03430538320594E+03; Pars: 1.012062E+00, 3.220690E-01, 1.856687E+00
, -2.268014E-01"
## [1] "Llh: -1.03430530102546E+03; Pars: 1.012082E+00, 3.220924E-01, 1.856643E+00
, -2.267447E-01"
## [1] "Llh: -1.03430532427069E+03; Pars: 1.012101E+00, 3.220754E-01, 1.856748E+00
, -2.267806E-01"

```

```
## [1] "Llh: -1.03430536944595E+03; Pars: 1.012080E+00, 3.220669E-01, 1.856734E+00  
, -2.268035E-01"  
## [1] "Llh: -1.03430523380341E+03; Pars: 1.012199E+00, 3.220789E-01, 1.856649E+00  
, -2.267654E-01"  
## [1] "Llh: -1.03430509948142E+03; Pars: 1.012309E+00, 3.220932E-01, 1.856585E+00  
, -2.267223E-01"  
## [1] "Llh: -1.03430512660497E+03; Pars: 1.012130E+00, 3.220867E-01, 1.856714E+00  
, -2.266331E-01"  
## [1] "Llh: -1.03430520451823E+03; Pars: 1.012132E+00, 3.220799E-01, 1.856703E+00  
, -2.266990E-01"  
## [1] "Llh: -1.03430501803338E+03; Pars: 1.012272E+00, 3.221425E-01, 1.856555E+00  
, -2.266281E-01"  
## [1] "Llh: -1.03430482880451E+03; Pars: 1.012388E+00, 3.221981E-01, 1.856438E+00  
, -2.265360E-01"  
## [1] "Llh: -1.03430485662908E+03; Pars: 1.012354E+00, 3.221598E-01, 1.856442E+00  
, -2.265375E-01"  
## [1] "Llh: -1.03430497098758E+03; Pars: 1.012291E+00, 3.221387E-01, 1.856518E+00  
, -2.265983E-01"  
## [1] "Llh: -1.03430465816079E+03; Pars: 1.012509E+00, 3.221764E-01, 1.856447E+00  
, -2.264698E-01"  
## [1] "Llh: -1.03430434749499E+03; Pars: 1.012722E+00, 3.222184E-01, 1.856349E+00  
, -2.263323E-01"  
## [1] "Llh: -1.03430444743969E+03; Pars: 1.012756E+00, 3.222480E-01, 1.856193E+00  
, -2.264310E-01"  
## [1] "Llh: -1.03430461183353E+03; Pars: 1.012599E+00, 3.222077E-01, 1.856323E+00  
, -2.264815E-01"  
## [1] "Llh: -1.03430416389378E+03; Pars: 1.012801E+00, 3.223190E-01, 1.856125E+00  
, -2.261961E-01"  
## [1] "Llh: -1.03430373646782E+03; Pars: 1.013047E+00, 3.224319E-01, 1.855895E+00  
, -2.259330E-01"  
## [1] "Llh: -1.03430382908946E+03; Pars: 1.013102E+00, 3.223885E-01, 1.855996E+00  
, -2.260787E-01"  
## [1] "Llh: -1.03430407629218E+03; Pars: 1.012915E+00, 3.223313E-01, 1.856107E+00  
, -2.261934E-01"  
## [1] "Llh: -1.03430338559480E+03; Pars: 1.013426E+00, 3.224453E-01, 1.855779E+00  
, -2.258515E-01"  
## [1] "Llh: -1.03430273832171E+03; Pars: 1.013945E+00, 3.225690E-01, 1.855450E+00  
, -2.255092E-01"  
## [1] "Llh: -1.03430290551782E+03; Pars: 1.013652E+00, 3.225559E-01, 1.855651E+00  
, -2.254957E-01"  
## [1] "Llh: -1.03430326527892E+03; Pars: 1.013428E+00, 3.224789E-01, 1.855787E+00  
, -2.257295E-01"  
## [1] "Llh: -1.03430238184330E+03; Pars: 1.014152E+00, 3.227542E-01, 1.855147E+00  
, -2.251760E-01"  
## [1] "Llh: -1.03430162336971E+03; Pars: 1.014867E+00, 3.230220E-01, 1.854547E+00  
, -2.245978E-01"  
## [1] "Llh: -1.03430174569220E+03; Pars: 1.014654E+00, 3.229009E-01, 1.854776E+00  
, -2.246892E-01"  
## [1] "Llh: -1.03430219853058E+03; Pars: 1.014266E+00, 3.227728E-01, 1.855081E+00  
, -2.250365E-01"
```

```

## [1] "Llh: -1.03430099377140E+03; Pars: 1.015514E+00, 3.230920E-01, 1.854317E+00
, -2.242129E-01"
## [1] "Llh: -1.03430008422645E+03; Pars: 1.016750E+00, 3.234220E-01, 1.853528E+00
, -2.233528E-01"
## [1] "Llh: -1.03430038669442E+03; Pars: 1.016456E+00, 3.234011E-01, 1.853499E+00
, -2.235788E-01"
## [1] "Llh: -1.03430085179372E+03; Pars: 1.015755E+00, 3.231898E-01, 1.854037E+00
, -2.240580E-01"
## [1] "Llh: -1.03429989930634E+03; Pars: 1.017420E+00, 3.238041E-01, 1.852726E+00
, -2.226001E-01"
## [1] "Llh: -1.03429979687841E+03; Pars: 1.019163E+00, 3.244216E-01, 1.851366E+00
, -2.211455E-01"
## [1] "Llh: -1.03429959782131E+03; Pars: 1.018967E+00, 3.242325E-01, 1.851695E+00
, -2.216483E-01"
## [1] "Llh: -1.03430010631685E+03; Pars: 1.021130E+00, 3.248982E-01, 1.850156E+00
, -2.201278E-01"
## [1] "Llh: -1.03429981100845E+03; Pars: 1.020807E+00, 3.247165E-01, 1.850499E+00
, -2.202649E-01"
## [1] "Llh: -1.03429952380340E+03; Pars: 1.019319E+00, 3.242929E-01, 1.851510E+00
, -2.213481E-01"
## [1] "Llh: -1.03429994791895E+03; Pars: 1.020646E+00, 3.247834E-01, 1.850551E+00
, -2.201685E-01"
## [1] "Llh: -1.03429961897473E+03; Pars: 1.019597E+00, 3.244378E-01, 1.851288E+00
, -2.210211E-01"
## [1] "Llh: -1.03430104529065E+03; Pars: 1.021779E+00, 3.252704E-01, 1.849403E+00
, -2.192287E-01"
## [1] "Llh: -1.03429962109737E+03; Pars: 1.018005E+00, 3.238841E-01, 1.852496E+00
, -2.223218E-01"
## [1] "Llh: -1.03429936154995E+03; Pars: 1.018781E+00, 3.240020E-01, 1.852128E+00
, -2.220241E-01"
## [1] "Llh: -1.03429925675626E+03; Pars: 1.018590E+00, 3.237922E-01, 1.852509E+00
, -2.224635E-01"
## [1] "Llh: -1.03429950517442E+03; Pars: 1.020233E+00, 3.244936E-01, 1.851005E+00
, -2.209187E-01"
## [1] "Llh: -1.03429944483041E+03; Pars: 1.019675E+00, 3.243412E-01, 1.851378E+00
, -2.212695E-01"
## [1] "Llh: -1.03429935430111E+03; Pars: 1.018679E+00, 3.238916E-01, 1.852258E+00
, -2.223436E-01"
## [1] "Llh: -1.03429936300753E+03; Pars: 1.018908E+00, 3.240282E-01, 1.852016E+00
, -2.220129E-01"
## [1] "Llh: -1.03429909891623E+03; Pars: 1.019165E+00, 3.239265E-01, 1.852133E+00
, -2.220640E-01"
## [1] "Llh: -1.03429888592963E+03; Pars: 1.019264E+00, 3.237736E-01, 1.852352E+00
, -2.222719E-01"
## [1] "Llh: -1.03429905773837E+03; Pars: 1.018784E+00, 3.236064E-01, 1.852739E+00
, -2.228261E-01"
## [1] "Llh: -1.03429909695222E+03; Pars: 1.018918E+00, 3.237780E-01, 1.852431E+00
, -2.224566E-01"
## [1] "Llh: -1.03429939692948E+03; Pars: 1.017984E+00, 3.231907E-01, 1.853552E+00
, -2.236830E-01"

```

```

## [1] "Llh: -1.03429919003597E+03; Pars: 1.018406E+00, 3.234783E-01, 1.853008E+00
, -2.230796E-01"
## [1] "Llh: -1.03429886465201E+03; Pars: 1.018843E+00, 3.234337E-01, 1.853046E+00
, -2.229770E-01"
## [1] "Llh: -1.03429871070700E+03; Pars: 1.018926E+00, 3.232047E-01, 1.853440E+00
, -2.232937E-01"
## [1] "Llh: -1.03429868279062E+03; Pars: 1.019100E+00, 3.232393E-01, 1.853260E+00
, -2.232722E-01"
## [1] "Llh: -1.03429852446681E+03; Pars: 1.019356E+00, 3.229628E-01, 1.853636E+00
, -2.236766E-01"
## [1] "Llh: -1.03429828945544E+03; Pars: 1.019759E+00, 3.232954E-01, 1.853075E+00
, -2.229545E-01"
## [1] "Llh: -1.03429787283629E+03; Pars: 1.020436E+00, 3.232040E-01, 1.853108E+00
, -2.228919E-01"
## [1] "Llh: -1.03429789432882E+03; Pars: 1.020206E+00, 3.229661E-01, 1.853530E+00
, -2.232410E-01"
## [1] "Llh: -1.03429815214380E+03; Pars: 1.019851E+00, 3.231262E-01, 1.853332E+00
, -2.231373E-01"
## [1] "Llh: -1.03429813714719E+03; Pars: 1.020198E+00, 3.223952E-01, 1.854505E+00
, -2.242797E-01"
## [1] "Llh: -1.03429811338150E+03; Pars: 1.019964E+00, 3.227398E-01, 1.853967E+00
, -2.237777E-01"
## [1] "Llh: -1.03429751160779E+03; Pars: 1.021056E+00, 3.227316E-01, 1.853680E+00
, -2.234999E-01"
## [1] "Llh: -1.03429702163017E+03; Pars: 1.022123E+00, 3.224951E-01, 1.853800E+00
, -2.236030E-01"
## [1] "Llh: -1.03429692079067E+03; Pars: 1.022010E+00, 3.227397E-01, 1.853566E+00
, -2.230802E-01"
## [1] "Llh: -1.03429625055612E+03; Pars: 1.023339E+00, 3.226282E-01, 1.853532E+00
, -2.227821E-01"
## [1] "Llh: -1.03429647122522E+03; Pars: 1.023088E+00, 3.229069E-01, 1.853018E+00
, -2.224813E-01"
## [1] "Llh: -1.03429681029701E+03; Pars: 1.022306E+00, 3.228651E-01, 1.853255E+00
, -2.228054E-01"
## [1] "Llh: -1.03429597435421E+03; Pars: 1.024290E+00, 3.226510E-01, 1.853200E+00
, -2.226382E-01"
## [1] "Llh: -1.03429529463007E+03; Pars: 1.026338E+00, 3.224934E-01, 1.853035E+00
, -2.223368E-01"
## [1] "Llh: -1.03429505188125E+03; Pars: 1.027016E+00, 3.220578E-01, 1.853584E+00
, -2.227096E-01"
## [1] "Llh: -1.03429501876966E+03; Pars: 1.030323E+00, 3.214848E-01, 1.853822E+00
, -2.226185E-01"
## [1] "Llh: -1.03429446681174E+03; Pars: 1.029426E+00, 3.222615E-01, 1.852903E+00
, -2.215063E-01"
## [1] "Llh: -1.03429425682306E+03; Pars: 1.033098E+00, 3.221448E-01, 1.852455E+00
, -2.204579E-01"
## [1] "Llh: -1.03429471042639E+03; Pars: 1.033473E+00, 3.214687E-01, 1.853403E+00
, -2.216163E-01"
## [1] "Llh: -1.03429446049824E+03; Pars: 1.030867E+00, 3.218282E-01, 1.853307E+00
, -2.218326E-01"

```

```
## [1] "Llh: -1.03429513634723E+03; Pars: 1.037013E+00, 3.213473E-01, 1.852777E+00  
, -2.208408E-01"  
## [1] "Llh: -1.03429452047051E+03; Pars: 1.033577E+00, 3.216676E-01, 1.852966E+00  
, -2.213261E-01"  
## [1] "Llh: -1.03429540345662E+03; Pars: 1.037624E+00, 3.210692E-01, 1.853240E+00  
, -2.207808E-01"  
## [1] "Llh: -1.03429455279752E+03; Pars: 1.029148E+00, 3.221374E-01, 1.853086E+00  
, -2.219478E-01"  
## [1] "Llh: -1.03429447547848E+03; Pars: 1.033021E+00, 3.224042E-01, 1.852085E+00  
, -2.201637E-01"  
## [1] "Llh: -1.03429427698429E+03; Pars: 1.032346E+00, 3.221743E-01, 1.852519E+00  
, -2.207774E-01"  
## [1] "Llh: -1.03429459445148E+03; Pars: 1.035806E+00, 3.217701E-01, 1.852537E+00  
, -2.202492E-01"  
## [1] "Llh: -1.03429430422321E+03; Pars: 1.030808E+00, 3.220455E-01, 1.852949E+00  
, -2.215231E-01"  
## [1] "Llh: -1.03429445164631E+03; Pars: 1.029984E+00, 3.224289E-01, 1.852649E+00  
, -2.209694E-01"  
## [1] "Llh: -1.03429431042811E+03; Pars: 1.030881E+00, 3.222385E-01, 1.852728E+00  
, -2.210585E-01"  
## [1] "Llh: -1.03429450547292E+03; Pars: 1.032699E+00, 3.224734E-01, 1.852019E+00  
, -2.200759E-01"  
## [1] "Llh: -1.03429426191975E+03; Pars: 1.031325E+00, 3.219895E-01, 1.852985E+00  
, -2.213934E-01"  
## [1] "Llh: -1.03429427484298E+03; Pars: 1.032907E+00, 3.219385E-01, 1.852725E+00  
, -2.210173E-01"  
## [1] "Llh: -1.03429421833578E+03; Pars: 1.032400E+00, 3.220135E-01, 1.852726E+00  
, -2.210276E-01"  
## [1] "Llh: -1.03429429688325E+03; Pars: 1.033778E+00, 3.221155E-01, 1.852394E+00  
, -2.203050E-01"  
## [1] "Llh: -1.03429424011032E+03; Pars: 1.033034E+00, 3.220980E-01, 1.852532E+00  
, -2.206095E-01"  
## [1] "Llh: -1.03429421929352E+03; Pars: 1.032582E+00, 3.219486E-01, 1.852830E+00  
, -2.209669E-01"  
## [1] "Llh: -1.03429419633100E+03; Pars: 1.032523E+00, 3.220050E-01, 1.852752E+00  
, -2.209195E-01"  
## [1] "Llh: -1.03429435978331E+03; Pars: 1.034205E+00, 3.221412E-01, 1.852248E+00  
, -2.201139E-01"  
## [1] "Llh: -1.03429420421706E+03; Pars: 1.032044E+00, 3.220274E-01, 1.852801E+00  
, -2.210735E-01"  
## [1] "Llh: -1.03429429635115E+03; Pars: 1.031904E+00, 3.219272E-01, 1.852951E+00  
, -2.213572E-01"  
## [1] "Llh: -1.03429422160230E+03; Pars: 1.032799E+00, 3.220904E-01, 1.852579E+00  
, -2.206827E-01"  
## [1] "Llh: -1.03429424267272E+03; Pars: 1.031849E+00, 3.219701E-01, 1.852896E+00  
, -2.212421E-01"  
## [1] "Llh: -1.03429421565512E+03; Pars: 1.032738E+00, 3.220661E-01, 1.852623E+00  
, -2.207677E-01"  
## [1] "Llh: -1.03429425002033E+03; Pars: 1.032054E+00, 3.219656E-01, 1.852872E+00  
, -2.212114E-01"
```

```

## [1] "Llh: -1.03429420822140E+03; Pars: 1.032613E+00, 3.220592E-01, 1.852652E+00
, -2.208149E-01"
## [1] "Llh: -1.03429419172434E+03; Pars: 1.032559E+00, 3.220653E-01, 1.852688E+00
, -2.207602E-01"
## [1] "Llh: -1.03429418813630E+03; Pars: 1.032638E+00, 3.220912E-01, 1.852669E+00
, -2.206264E-01"
## [1] "Llh: -1.03429417367112E+03; Pars: 1.032171E+00, 3.220254E-01, 1.852813E+00
, -2.209495E-01"
## [1] "Llh: -1.03429417364410E+03; Pars: 1.031888E+00, 3.220050E-01, 1.852908E+00
, -2.210404E-01"
## [1] "Llh: -1.03429416951411E+03; Pars: 1.031934E+00, 3.220051E-01, 1.852913E+00
, -2.210150E-01"
## [1] "Llh: -1.03429417839829E+03; Pars: 1.031594E+00, 3.219781E-01, 1.853043E+00
, -2.211150E-01"
## [1] "Llh: -1.03429413583469E+03; Pars: 1.032447E+00, 3.220257E-01, 1.852821E+00
, -2.207271E-01"
## [1] "Llh: -1.03429411174709E+03; Pars: 1.032649E+00, 3.220249E-01, 1.852831E+00
, -2.205539E-01"
## [1] "Llh: -1.03429411485527E+03; Pars: 1.032031E+00, 3.220581E-01, 1.852908E+00
, -2.206984E-01"
## [1] "Llh: -1.03429412984306E+03; Pars: 1.032154E+00, 3.220448E-01, 1.852869E+00
, -2.207536E-01"
## [1] "Llh: -1.03429415193064E+03; Pars: 1.031613E+00, 3.219554E-01, 1.853111E+00
, -2.210274E-01"
## [1] "Llh: -1.03429413645372E+03; Pars: 1.031869E+00, 3.219893E-01, 1.853001E+00
, -2.209272E-01"
## [1] "Llh: -1.03429408860425E+03; Pars: 1.032353E+00, 3.220337E-01, 1.852918E+00
, -2.205569E-01"
## [1] "Llh: -1.03429407186705E+03; Pars: 1.032586E+00, 3.220481E-01, 1.852922E+00
, -2.203151E-01"
## [1] "Llh: -1.03429406648711E+03; Pars: 1.032633E+00, 3.220551E-01, 1.852918E+00
, -2.202323E-01"
## [1] "Llh: -1.03429407110500E+03; Pars: 1.032983E+00, 3.220801E-01, 1.852921E+00
, -2.198409E-01"
## [1] "Llh: -1.03429412358813E+03; Pars: 1.033081E+00, 3.221038E-01, 1.852789E+00
, -2.199727E-01"
## [1] "Llh: -1.03429409757870E+03; Pars: 1.032778E+00, 3.220752E-01, 1.852842E+00
, -2.202113E-01"
## [1] "Llh: -1.03429409320504E+03; Pars: 1.033293E+00, 3.220435E-01, 1.852848E+00
, -2.199579E-01"
## [1] "Llh: -1.03429408416047E+03; Pars: 1.032977E+00, 3.220472E-01, 1.852863E+00
, -2.201430E-01"
## [1] "Llh: -1.03429406881444E+03; Pars: 1.032839E+00, 3.220879E-01, 1.852942E+00
, -2.198969E-01"
## [1] "Llh: -1.03429407124852E+03; Pars: 1.032791E+00, 3.220721E-01, 1.852914E+00
, -2.200612E-01"
## [1] "Llh: -1.03429404346403E+03; Pars: 1.032740E+00, 3.220439E-01, 1.852981E+00
, -2.200824E-01"
## [1] "Llh: -1.03429401841240E+03; Pars: 1.032721E+00, 3.220283E-01, 1.853051E+00
, -2.200179E-01"

```

```

## [1] "Llh: -1.03429402624654E+03; Pars: 1.032413E+00, 3.220625E-01, 1.853054E+00
, -2.200881E-01"
## [1] "Llh: -1.03429403929854E+03; Pars: 1.032554E+00, 3.220587E-01, 1.853006E+00
, -2.201018E-01"
## [1] "Llh: -1.03429402611342E+03; Pars: 1.032717E+00, 3.220688E-01, 1.853060E+00
, -2.198025E-01"
## [1] "Llh: -1.03429403288208E+03; Pars: 1.032684E+00, 3.220636E-01, 1.853026E+00
, -2.199307E-01"
## [1] "Llh: -1.03429400291334E+03; Pars: 1.032403E+00, 3.220195E-01, 1.853099E+00
, -2.201735E-01"
## [1] "Llh: -1.03429400761282E+03; Pars: 1.032185E+00, 3.219854E-01, 1.853177E+00
, -2.203117E-01"
## [1] "Llh: -1.03429397441406E+03; Pars: 1.032493E+00, 3.220345E-01, 1.853213E+00
, -2.198087E-01"
## [1] "Llh: -1.03429394302567E+03; Pars: 1.032423E+00, 3.220242E-01, 1.853361E+00
, -2.195969E-01"
## [1] "Llh: -1.03429397522216E+03; Pars: 1.032719E+00, 3.220079E-01, 1.853232E+00
, -2.197073E-01"
## [1] "Llh: -1.03429397772079E+03; Pars: 1.032643E+00, 3.220216E-01, 1.853187E+00
, -2.198025E-01"
## [1] "Llh: -1.03429397186053E+03; Pars: 1.032417E+00, 3.219712E-01, 1.853311E+00
, -2.199453E-01"
## [1] "Llh: -1.03429397350484E+03; Pars: 1.032492E+00, 3.219956E-01, 1.853248E+00
, -2.199096E-01"
## [1] "Llh: -1.03429393158711E+03; Pars: 1.032260E+00, 3.219831E-01, 1.853451E+00
, -2.196936E-01"
## [1] "Llh: -1.03429390591012E+03; Pars: 1.032030E+00, 3.219605E-01, 1.853651E+00
, -2.195314E-01"
## [1] "Llh: -1.03429393071634E+03; Pars: 1.032391E+00, 3.219624E-01, 1.853678E+00
, -2.192170E-01"
## [1] "Llh: -1.03429393136978E+03; Pars: 1.032394E+00, 3.219767E-01, 1.853534E+00
, -2.194561E-01"
## [1] "Llh: -1.03429389881069E+03; Pars: 1.031911E+00, 3.219512E-01, 1.853769E+00
, -2.194380E-01"
## [1] "Llh: -1.03429388331697E+03; Pars: 1.031507E+00, 3.219228E-01, 1.854038E+00
, -2.193034E-01"
## [1] "Llh: -1.03429390763594E+03; Pars: 1.031759E+00, 3.219637E-01, 1.854053E+00
, -2.188791E-01"
## [1] "Llh: -1.03429389959772E+03; Pars: 1.031923E+00, 3.219656E-01, 1.853867E+00
, -2.191456E-01"
## [1] "Llh: -1.03429390083153E+03; Pars: 1.031503E+00, 3.218814E-01, 1.854256E+00
, -2.190018E-01"
## [1] "Llh: -1.03429389550741E+03; Pars: 1.031733E+00, 3.219171E-01, 1.854032E+00
, -2.191506E-01"
## [1] "Llh: -1.03429387129658E+03; Pars: 1.031206E+00, 3.219206E-01, 1.854115E+00
, -2.193484E-01"
## [1] "Llh: -1.03429386836374E+03; Pars: 1.030614E+00, 3.218997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429389268015E+03; Pars: 1.030859E+00, 3.218922E-01, 1.854485E+00
, -2.189754E-01"

```

```

## [1] "Llh: -1.03429388115878E+03; Pars: 1.031152E+00, 3.219092E-01, 1.854276E+00
, -2.191144E-01"
## [1] "Llh: -1.03429388229223E+03; Pars: 1.030580E+00, 3.218589E-01, 1.854473E+00
, -2.193456E-01"
## [1] "Llh: -1.03429387600659E+03; Pars: 1.030915E+00, 3.218855E-01, 1.854321E+00
, -2.192956E-01"
## [1] "Llh: -1.03429387554801E+03; Pars: 1.030362E+00, 3.218916E-01, 1.854452E+00
, -2.194132E-01"
## [1] "Llh: -1.03429387157177E+03; Pars: 1.030704E+00, 3.218980E-01, 1.854347E+00
, -2.193476E-01"
## [1] "Llh: -1.03429413249736E+03; Pars: 1.032677E+00, 3.218997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429386836374E+03; Pars: 1.030614E+00, 3.218997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429512446672E+03; Pars: 1.031645E+00, 3.228997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429379907971E+03; Pars: 1.031645E+00, 3.208997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429472649724E+03; Pars: 1.031645E+00, 3.218997E-01, 1.856189E+00
, -2.194142E-01"
## [1] "Llh: -1.03429375511754E+03; Pars: 1.031645E+00, 3.218997E-01, 1.852481E+00
, -2.194142E-01"
## [1] "Llh: -1.03429394499098E+03; Pars: 1.031645E+00, 3.218997E-01, 1.854334E+00
, -2.184142E-01"
## [1] "Llh: -1.03429415580831E+03; Pars: 1.031645E+00, 3.218997E-01, 1.854334E+00
, -2.204142E-01"
## [1] "Llh: -1.03429386836374E+03; Pars: 1.030614E+00, 3.218997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429380911382E+03; Pars: 1.028555E+00, 3.218997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429493667035E+03; Pars: 1.029584E+00, 3.228997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429368302330E+03; Pars: 1.029584E+00, 3.208997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429444674321E+03; Pars: 1.029584E+00, 3.218997E-01, 1.856189E+00
, -2.194142E-01"
## [1] "Llh: -1.03429371093528E+03; Pars: 1.029584E+00, 3.218997E-01, 1.852481E+00
, -2.194142E-01"
## [1] "Llh: -1.03429377963557E+03; Pars: 1.029584E+00, 3.218997E-01, 1.854334E+00
, -2.184142E-01"
## [1] "Llh: -1.03429399758991E+03; Pars: 1.029584E+00, 3.218997E-01, 1.854334E+00
, -2.204142E-01"
## [1] "Llh: -1.03429512446672E+03; Pars: 1.031645E+00, 3.228997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429493667035E+03; Pars: 1.029584E+00, 3.228997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429637207936E+03; Pars: 1.030614E+00, 3.238997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429386836374E+03; Pars: 1.030614E+00, 3.218997E-01, 1.854334E+00
, -2.194142E-01"

```

```
## [1] "Llh: -1.03429572941346E+03; Pars: 1.030614E+00, 3.228997E-01, 1.856189E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429481209115E+03; Pars: 1.030614E+00, 3.228997E-01, 1.852481E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429512490282E+03; Pars: 1.030614E+00, 3.228997E-01, 1.854334E+00  
, -2.184142E-01"  
## [1] "Llh: -1.03429503607055E+03; Pars: 1.030614E+00, 3.228997E-01, 1.854334E+00  
, -2.204142E-01"  
## [1] "Llh: -1.03429379907971E+03; Pars: 1.031645E+00, 3.208997E-01, 1.854334E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429368302330E+03; Pars: 1.029584E+00, 3.208997E-01, 1.854334E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429386836374E+03; Pars: 1.030614E+00, 3.218997E-01, 1.854334E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429367086850E+03; Pars: 1.030614E+00, 3.198997E-01, 1.854334E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429437521777E+03; Pars: 1.030614E+00, 3.208997E-01, 1.856189E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429358734801E+03; Pars: 1.030614E+00, 3.208997E-01, 1.852481E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429353208483E+03; Pars: 1.030614E+00, 3.208997E-01, 1.854334E+00  
, -2.184142E-01"  
## [1] "Llh: -1.03429404974266E+03; Pars: 1.030614E+00, 3.208997E-01, 1.854334E+00  
, -2.204142E-01"  
## [1] "Llh: -1.03429472649724E+03; Pars: 1.031645E+00, 3.218997E-01, 1.856189E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429444674321E+03; Pars: 1.029584E+00, 3.218997E-01, 1.856189E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429572941346E+03; Pars: 1.030614E+00, 3.228997E-01, 1.856189E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429437521777E+03; Pars: 1.030614E+00, 3.208997E-01, 1.856189E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429578485113E+03; Pars: 1.030614E+00, 3.218997E-01, 1.858046E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429386836374E+03; Pars: 1.030614E+00, 3.218997E-01, 1.854334E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429454559646E+03; Pars: 1.030614E+00, 3.218997E-01, 1.856189E+00  
, -2.184142E-01"  
## [1] "Llh: -1.03429472715689E+03; Pars: 1.030614E+00, 3.218997E-01, 1.856189E+00  
, -2.204142E-01"  
## [1] "Llh: -1.03429375511754E+03; Pars: 1.031645E+00, 3.218997E-01, 1.852481E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429371093528E+03; Pars: 1.029584E+00, 3.218997E-01, 1.852481E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429481209115E+03; Pars: 1.030614E+00, 3.228997E-01, 1.852481E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429358734801E+03; Pars: 1.030614E+00, 3.208997E-01, 1.852481E+00  
, -2.194142E-01"  
## [1] "Llh: -1.03429386836374E+03; Pars: 1.030614E+00, 3.218997E-01, 1.854334E+00  
, -2.194142E-01"
```

```

## [1] "Llh: -1.03429407867007E+03; Pars: 1.030614E+00, 3.218997E-01, 1.850629E+00
, -2.194142E-01"
## [1] "Llh: -1.03429365943160E+03; Pars: 1.030614E+00, 3.218997E-01, 1.852481E+00
, -2.184142E-01"
## [1] "Llh: -1.03429390679552E+03; Pars: 1.030614E+00, 3.218997E-01, 1.852481E+00
, -2.204142E-01"
## [1] "Llh: -1.03429394499098E+03; Pars: 1.031645E+00, 3.218997E-01, 1.854334E+00
, -2.184142E-01"
## [1] "Llh: -1.03429377963557E+03; Pars: 1.029584E+00, 3.218997E-01, 1.854334E+00
, -2.184142E-01"
## [1] "Llh: -1.03429512490282E+03; Pars: 1.030614E+00, 3.228997E-01, 1.854334E+00
, -2.184142E-01"
## [1] "Llh: -1.03429353208483E+03; Pars: 1.030614E+00, 3.208997E-01, 1.854334E+00
, -2.184142E-01"
## [1] "Llh: -1.03429454559646E+03; Pars: 1.030614E+00, 3.218997E-01, 1.856189E+00
, -2.184142E-01"
## [1] "Llh: -1.03429365943160E+03; Pars: 1.030614E+00, 3.218997E-01, 1.852481E+00
, -2.184142E-01"
## [1] "Llh: -1.03429395613168E+03; Pars: 1.030614E+00, 3.218997E-01, 1.854334E+00
, -2.174142E-01"
## [1] "Llh: -1.03429386836374E+03; Pars: 1.030614E+00, 3.218997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429415580831E+03; Pars: 1.031645E+00, 3.218997E-01, 1.854334E+00
, -2.204142E-01"
## [1] "Llh: -1.03429399758991E+03; Pars: 1.029584E+00, 3.218997E-01, 1.854334E+00
, -2.204142E-01"
## [1] "Llh: -1.03429503607055E+03; Pars: 1.030614E+00, 3.228997E-01, 1.854334E+00
, -2.204142E-01"
## [1] "Llh: -1.03429404974266E+03; Pars: 1.030614E+00, 3.208997E-01, 1.854334E+00
, -2.204142E-01"
## [1] "Llh: -1.03429472715689E+03; Pars: 1.030614E+00, 3.218997E-01, 1.856189E+00
, -2.204142E-01"
## [1] "Llh: -1.03429390679552E+03; Pars: 1.030614E+00, 3.218997E-01, 1.852481E+00
, -2.204142E-01"
## [1] "Llh: -1.03429386836374E+03; Pars: 1.030614E+00, 3.218997E-01, 1.854334E+00
, -2.194142E-01"
## [1] "Llh: -1.03429438485171E+03; Pars: 1.030614E+00, 3.218997E-01, 1.854334E+00
, -2.214142E-01"
## Currently fitting: asymmetric t
## [1] "Llh: -1.07525365296849E+03; Pars: -1.750000E+00, 1.733995E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.07449339584390E+03; Pars: -1.771890E+00, 1.733995E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.07563783577213E+03; Pars: -1.750000E+00, 2.021677E-01, 1.320976E+00
, 0.000000E+00"
## [1] "Llh: -1.06919319234427E+03; Pars: -1.750000E+00, 1.733995E-01, 1.359530E+00
, 0.000000E+00"
## [1] "Llh: -1.07603782627767E+03; Pars: -1.750000E+00, 1.733995E-01, 1.320976E+00
, 2.876821E-02"
## [1] "Llh: -1.07139827397335E+03; Pars: -1.760866E+00, 1.877836E-01, 1.340114E+00

```

```

, -2.876821E-02"
## [1] "Llh: -1.07244523032844E+03; Pars: -1.758135E+00, 1.841876E-01, 1.335304E+00
, -1.438410E-02"
## [1] "Llh: -1.06986921095610E+03; Pars: -1.766358E+00, 1.518233E-01, 1.349787E+00
, -1.438410E-02"
## [1] "Llh: -1.07113977745711E+03; Pars: -1.762235E+00, 1.644094E-01, 1.342526E+00
, -1.078808E-02"
## [1] "Llh: -1.06735185868000E+03; Pars: -1.774670E+00, 1.698035E-01, 1.364428E+00
, -2.157616E-02"
## [1] "Llh: -1.06381814539034E+03; Pars: -1.787308E+00, 1.680055E-01, 1.386687E+00
, -3.236423E-02"
## [1] "Llh: -1.06307667492582E+03; Pars: -1.760182E+00, 1.671065E-01, 1.397952E+00
, -3.775827E-02"
## [1] "Llh: -1.05832638972589E+03; Pars: -1.754395E+00, 1.639599E-01, 1.438106E+00
, -5.663741E-02"
## [1] "Llh: -1.05939924494451E+03; Pars: -1.767910E+00, 1.408105E-01, 1.427479E+00
, -2.292467E-02"
## [1] "Llh: -1.06210729499989E+03; Pars: -1.766143E+00, 1.525538E-01, 1.405118E+00
, -2.438555E-02"
## [1] "Llh: -1.05590000310237E+03; Pars: -1.763178E+00, 1.712644E-01, 1.457467E+00
, -4.157905E-02"
## [1] "Llh: -1.05031672489604E+03; Pars: -1.761593E+00, 1.809849E-01, 1.514486E+00
, -5.517652E-02"
## [1] "Llh: -1.04914278096960E+03; Pars: -1.785827E+00, 1.534809E-01, 1.527261E+00
, -8.355141E-02"
## [1] "Llh: -1.04336822997280E+03; Pars: -1.804378E+00, 1.435216E-01, 1.618735E+00
, -1.253271E-01"
## [1] "Llh: -1.04349324370185E+03; Pars: -1.756661E+00, 1.466330E-01, 1.617791E+00
, -9.766863E-02"
## [1] "Llh: -1.04720541377574E+03; Pars: -1.764209E+00, 1.519761E-01, 1.556634E+00
, -8.134253E-02"
## [1] "Llh: -1.04055226489980E+03; Pars: -1.770073E+00, 1.767392E-01, 1.673044E+00
, -1.444802E-01"
## [1] "Llh: -1.03696025668014E+03; Pars: -1.771157E+00, 1.947035E-01, 1.811240E+00
, -2.052579E-01"
## [1] "Llh: -1.03649362088751E+03; Pars: -1.792528E+00, 1.689615E-01, 1.863712E+00
, -1.850777E-01"
## [1] "Llh: -1.04055069937939E+03; Pars: -1.812311E+00, 1.714623E-01, 2.121645E+00
, -2.492978E-01"
## [1] "Llh: -1.03858719804834E+03; Pars: -1.800823E+00, 1.459249E-01, 1.963185E+00
, -2.514892E-01"
## [1] "Llh: -1.03744589381687E+03; Pars: -1.790830E+00, 1.546899E-01, 1.839870E+00
, -2.024110E-01"
## [1] "Llh: -1.03791010917477E+03; Pars: -1.824041E+00, 1.843053E-01, 1.959911E+00
, -2.613682E-01"
## [1] "Llh: -1.03708644478469E+03; Pars: -1.806653E+00, 1.748872E-01, 1.868133E+00
, -2.204433E-01"
## [1] "Llh: -1.03938604488189E+03; Pars: -1.776253E+00, 2.030995E-01, 2.104260E+00
, -2.812679E-01"
## [1] "Llh: -1.03707744065089E+03; Pars: -1.783191E+00, 1.882050E-01, 1.970690E+00

```

```

, -2.422827E-01"
## [1] "Llh: -1.03617969204251E+03; Pars: -1.785729E+00, 2.086887E-01, 1.916035E+00
, -2.241198E-01"
## [1] "Llh: -1.03607460824881E+03; Pars: -1.783191E+00, 2.356881E-01, 1.955291E+00
, -2.349742E-01"
## [1] "Llh: -1.03571349185618E+03; Pars: -1.759031E+00, 2.188919E-01, 1.930565E+00
, -2.133529E-01"
## [1] "Llh: -1.03541225697318E+03; Pars: -1.736284E+00, 2.408942E-01, 1.962559E+00
, -2.098077E-01"
## [1] "Llh: -1.03585827954078E+03; Pars: -1.757997E+00, 2.319187E-01, 1.826316E+00
, -1.752761E-01"
## [1] "Llh: -1.03570499052246E+03; Pars: -1.764219E+00, 2.209902E-01, 1.861387E+00
, -1.920277E-01"
## [1] "Llh: -1.03616953930867E+03; Pars: -1.766355E+00, 2.385636E-01, 2.014414E+00
, -2.056858E-01"
## [1] "Llh: -1.03572345361715E+03; Pars: -1.767553E+00, 2.275985E-01, 1.961578E+00
, -2.055788E-01"
## [1] "Llh: -1.03585479305785E+03; Pars: -1.733846E+00, 2.936240E-01, 2.008442E+00
, -2.361165E-01"
## [1] "Llh: -1.03557628257813E+03; Pars: -1.748096E+00, 2.624584E-01, 1.971239E+00
, -2.233568E-01"
## [1] "Llh: -1.03506594237655E+03; Pars: -1.725766E+00, 2.402826E-01, 1.922165E+00
, -1.804113E-01"
## [1] "Llh: -1.03492448387903E+03; Pars: -1.698652E+00, 2.425798E-01, 1.905813E+00
, -1.531299E-01"
## [1] "Llh: -1.03515273855082E+03; Pars: -1.706533E+00, 2.558628E-01, 1.888573E+00
, -1.835823E-01"
## [1] "Llh: -1.03511732709045E+03; Pars: -1.721318E+00, 2.487967E-01, 1.906566E+00
, -1.890814E-01"
## [1] "Llh: -1.03528785452081E+03; Pars: -1.689410E+00, 2.763743E-01, 2.014236E+00
, -1.956602E-01"
## [1] "Llh: -1.03511510006911E+03; Pars: -1.707396E+00, 2.625283E-01, 1.974885E+00
, -1.947521E-01"
## [1] "Llh: -1.03489554700114E+03; Pars: -1.684842E+00, 2.349411E-01, 1.903746E+00
, -1.500287E-01"
## [1] "Llh: -1.03520242491475E+03; Pars: -1.655250E+00, 2.211825E-01, 1.870872E+00
, -1.133646E-01"
## [1] "Llh: -1.03514734434771E+03; Pars: -1.671081E+00, 2.535288E-01, 1.883297E+00
, -1.336883E-01"
## [1] "Llh: -1.03494463959658E+03; Pars: -1.686819E+00, 2.503702E-01, 1.902807E+00
, -1.527181E-01"
## [1] "Llh: -1.03474174204116E+03; Pars: -1.668424E+00, 2.464130E-01, 1.936695E+00
, -1.362330E-01"
## [1] "Llh: -1.03471039302322E+03; Pars: -1.643450E+00, 2.452211E-01, 1.951938E+00
, -1.098088E-01"
## [1] "Llh: -1.03548595535118E+03; Pars: -1.650043E+00, 2.240278E-01, 1.858802E+00
, -8.809067E-02"
## [1] "Llh: -1.03485561917168E+03; Pars: -1.692600E+00, 2.529032E-01, 1.945202E+00
, -1.680867E-01"
## [1] "Llh: -1.03468949801619E+03; Pars: -1.672329E+00, 2.374525E-01, 1.950586E+00

```

```

, -1.378089E-01"
## [1] "Llh: -1.03465475169695E+03; Pars: -1.665199E+00, 2.309936E-01, 1.974924E+00
, -1.303542E-01"
## [1] "Llh: -1.03460270225942E+03; Pars: -1.644924E+00, 2.394497E-01, 1.982507E+00
, -1.260093E-01"
## [1] "Llh: -1.03460441017306E+03; Pars: -1.619630E+00, 2.378847E-01, 2.022005E+00
, -1.124490E-01"
## [1] "Llh: -1.03484737212750E+03; Pars: -1.638467E+00, 2.493427E-01, 2.025298E+00
, -1.171008E-01"
## [1] "Llh: -1.03470628238562E+03; Pars: -1.649757E+00, 2.457423E-01, 1.994201E+00
, -1.253328E-01"
## [1] "Llh: -1.03459465215796E+03; Pars: -1.611478E+00, 2.278002E-01, 2.006945E+00
, -7.766582E-02"
## [1] "Llh: -1.03471002080705E+03; Pars: -1.574553E+00, 2.152487E-01, 2.038547E+00
, -3.245537E-02"
## [1] "Llh: -1.03472962717073E+03; Pars: -1.641625E+00, 2.267718E-01, 2.028004E+00
, -1.198723E-01"
## [1] "Llh: -1.03463357068967E+03; Pars: -1.642993E+00, 2.406088E-01, 1.970683E+00
, -1.123246E-01"
## [1] "Llh: -1.03452526183035E+03; Pars: -1.632081E+00, 2.236839E-01, 1.973285E+00
, -9.784421E-02"
## [1] "Llh: -1.03450561319775E+03; Pars: -1.623423E+00, 2.126547E-01, 1.962909E+00
, -8.409993E-02"
## [1] "Llh: -1.03461508563429E+03; Pars: -1.597706E+00, 2.292630E-01, 1.986475E+00
, -6.969564E-02"
## [1] "Llh: -1.03456318046112E+03; Pars: -1.613909E+00, 2.296957E-01, 1.983581E+00
, -8.486028E-02"
## [1] "Llh: -1.03445735951003E+03; Pars: -1.604201E+00, 2.141913E-01, 1.997255E+00
, -7.399303E-02"
## [1] "Llh: -1.03440574049316E+03; Pars: -1.585692E+00, 2.009826E-01, 2.010675E+00
, -5.482723E-02"
## [1] "Llh: -1.03457720160125E+03; Pars: -1.574063E+00, 1.961169E-01, 1.999396E+00
, -2.471732E-02"
## [1] "Llh: -1.03451065136431E+03; Pars: -1.591013E+00, 2.069501E-01, 1.995160E+00
, -5.004032E-02"
## [1] "Llh: -1.03447285078046E+03; Pars: -1.595245E+00, 1.973413E-01, 1.969244E+00
, -5.924806E-02"
## [1] "Llh: -1.03446168598039E+03; Pars: -1.599262E+00, 2.049560E-01, 1.978602E+00
, -6.385250E-02"
## [1] "Llh: -1.03441477509029E+03; Pars: -1.585773E+00, 1.830760E-01, 1.989937E+00
, -4.154970E-02"
## [1] "Llh: -1.03442740886384E+03; Pars: -1.592684E+00, 1.947309E-01, 1.988346E+00
, -5.237735E-02"
## [1] "Llh: -1.03440037435756E+03; Pars: -1.605762E+00, 1.938846E-01, 1.975796E+00
, -7.212437E-02"
## [1] "Llh: -1.03442035072524E+03; Pars: -1.613275E+00, 1.873518E-01, 1.966184E+00
, -8.316639E-02"
## [1] "Llh: -1.03435813211936E+03; Pars: -1.566077E+00, 1.787950E-01, 2.014840E+00
, -3.207697E-02"
## [1] "Llh: -1.03436213886457E+03; Pars: -1.539414E+00, 1.618651E-01, 2.041319E+00

```

```

, -6.065487E-03"
## [1] "Llh: -1.03433335621678E+03; Pars: -1.572363E+00, 1.734131E-01, 2.017081E+00
, -3.643663E-02"
## [1] "Llh: -1.03432782171961E+03; Pars: -1.559369E+00, 1.576416E-01, 2.036601E+00
, -2.272870E-02"
## [1] "Llh: -1.03430232684300E+03; Pars: -1.572194E+00, 1.825759E-01, 2.028972E+00
, -4.932893E-02"
## [1] "Llh: -1.03429039484858E+03; Pars: -1.565524E+00, 1.823258E-01, 2.048776E+00
, -5.321854E-02"
## [1] "Llh: -1.03429815822368E+03; Pars: -1.562334E+00, 1.553408E-01, 2.026981E+00
, -3.524706E-02"
## [1] "Llh: -1.03429427296070E+03; Pars: -1.568085E+00, 1.667513E-01, 2.022892E+00
, -4.014210E-02"
## [1] "Llh: -1.03435481549267E+03; Pars: -1.526522E+00, 1.488722E-01, 2.087203E+00
, -1.958784E-03"
## [1] "Llh: -1.03430887760856E+03; Pars: -1.545303E+00, 1.601253E-01, 2.058776E+00
, -1.950018E-02"
## [1] "Llh: -1.03432581136159E+03; Pars: -1.552999E+00, 1.546270E-01, 2.068952E+00
, -3.571779E-02"
## [1] "Llh: -1.03429729797968E+03; Pars: -1.556240E+00, 1.606690E-01, 2.055289E+00
, -3.480758E-02"
## [1] "Llh: -1.03426629704035E+03; Pars: -1.558064E+00, 1.772941E-01, 2.056216E+00
, -5.110550E-02"
## [1] "Llh: -1.03427045502057E+03; Pars: -1.557412E+00, 1.871204E-01, 2.066094E+00
, -6.529391E-02"
## [1] "Llh: -1.03428040793052E+03; Pars: -1.579118E+00, 1.833948E-01, 2.032803E+00
, -7.013668E-02"
## [1] "Llh: -1.03427346580060E+03; Pars: -1.570472E+00, 1.775774E-01, 2.039265E+00
, -5.747756E-02"
## [1] "Llh: -1.03427547890150E+03; Pars: -1.574948E+00, 1.913053E-01, 2.028298E+00
, -6.616426E-02"
## [1] "Llh: -1.03427012612405E+03; Pars: -1.570213E+00, 1.836462E-01, 2.035012E+00
, -5.832509E-02"
## [1] "Llh: -1.03432382189062E+03; Pars: -1.564014E+00, 1.936705E-01, 2.066946E+00
, -6.992125E-02"
## [1] "Llh: -1.03427421411060E+03; Pars: -1.567064E+00, 1.734811E-01, 2.033817E+00
, -4.758689E-02"
## [1] "Llh: -1.03425649949431E+03; Pars: -1.567340E+00, 1.736736E-01, 2.033369E+00
, -5.402898E-02"
## [1] "Llh: -1.03425656005579E+03; Pars: -1.568250E+00, 1.693476E-01, 2.025709E+00
, -5.443420E-02"
## [1] "Llh: -1.03426098491976E+03; Pars: -1.565936E+00, 1.826146E-01, 2.048099E+00
, -6.288168E-02"
## [1] "Llh: -1.03426095710420E+03; Pars: -1.566218E+00, 1.803312E-01, 2.044519E+00
, -5.905798E-02"
## [1] "Llh: -1.03424837835059E+03; Pars: -1.560453E+00, 1.798952E-01, 2.045257E+00
, -5.378123E-02"
## [1] "Llh: -1.03423865007479E+03; Pars: -1.555509E+00, 1.810541E-01, 2.048259E+00
, -5.193306E-02"
## [1] "Llh: -1.03423987435703E+03; Pars: -1.553431E+00, 1.725303E-01, 2.056191E+00

```

```

, -4.973767E-02"
## [1] "Llh: -1.03424517018649E+03; Pars: -1.557580E+00, 1.753093E-01, 2.050876E+00
, -5.188453E-02"
## [1] "Llh: -1.03423544329358E+03; Pars: -1.563128E+00, 1.765005E-01, 2.034976E+00
, -5.627334E-02"
## [1] "Llh: -1.03423540071712E+03; Pars: -1.565677E+00, 1.761037E-01, 2.024438E+00
, -5.885727E-02"
## [1] "Llh: -1.03422433813456E+03; Pars: -1.554753E+00, 1.713496E-01, 2.036542E+00
, -4.822051E-02"
## [1] "Llh: -1.03422463583838E+03; Pars: -1.549109E+00, 1.668588E-01, 2.032565E+00
, -4.280177E-02"
## [1] "Llh: -1.03420244312416E+03; Pars: -1.547480E+00, 1.768452E-01, 2.049307E+00
, -5.034527E-02"
## [1] "Llh: -1.03418096432833E+03; Pars: -1.537813E+00, 1.784310E-01, 2.057322E+00
, -4.850341E-02"
## [1] "Llh: -1.03421680963257E+03; Pars: -1.553264E+00, 1.809389E-01, 2.027119E+00
, -5.401945E-02"
## [1] "Llh: -1.03421197399657E+03; Pars: -1.553305E+00, 1.788368E-01, 2.034348E+00
, -5.294901E-02"
## [1] "Llh: -1.03420567651049E+03; Pars: -1.550099E+00, 1.713065E-01, 2.028046E+00
, -5.233203E-02"
## [1] "Llh: -1.03420432398639E+03; Pars: -1.551447E+00, 1.737434E-01, 2.033081E+00
, -5.223229E-02"
## [1] "Llh: -1.03418236261032E+03; Pars: -1.533373E+00, 1.750767E-01, 2.056285E+00
, -4.209534E-02"
## [1] "Llh: -1.03419076611353E+03; Pars: -1.541272E+00, 1.753335E-01, 2.048276E+00
, -4.628582E-02"
## [1] "Llh: -1.03416681013626E+03; Pars: -1.533293E+00, 1.816943E-01, 2.053947E+00
, -4.966952E-02"
## [1] "Llh: -1.03415061556701E+03; Pars: -1.522876E+00, 1.868667E-01, 2.062706E+00
, -5.039403E-02"
## [1] "Llh: -1.03414438239056E+03; Pars: -1.519777E+00, 1.782221E-01, 2.070444E+00
, -4.366353E-02"
## [1] "Llh: -1.03412342285393E+03; Pars: -1.503783E+00, 1.779148E-01, 2.088732E+00
, -3.902079E-02"
## [1] "Llh: -1.03415512529207E+03; Pars: -1.498481E+00, 1.854012E-01, 2.099898E+00
, -3.777449E-02"
## [1] "Llh: -1.03414937322175E+03; Pars: -1.511225E+00, 1.824868E-01, 2.082990E+00
, -4.138894E-02"
## [1] "Llh: -1.03412431561602E+03; Pars: -1.504559E+00, 1.877729E-01, 2.089640E+00
, -4.755824E-02"
## [1] "Llh: -1.03413410001713E+03; Pars: -1.511613E+00, 1.845989E-01, 2.081251E+00
, -4.619252E-02"
## [1] "Llh: -1.03411749774411E+03; Pars: -1.484676E+00, 1.890895E-01, 2.104927E+00
, -4.067759E-02"
## [1] "Llh: -1.03412920909434E+03; Pars: -1.460110E+00, 1.944188E-01, 2.129140E+00
, -3.676468E-02"
## [1] "Llh: -1.03411819848604E+03; Pars: -1.479967E+00, 1.817653E-01, 2.120811E+00
, -3.392876E-02"
## [1] "Llh: -1.03411964479312E+03; Pars: -1.490352E+00, 1.830407E-01, 2.106133E+00

```

```

, -3.804507E-02"
## [1] "Llh: -1.03409174398319E+03; Pars: -1.475660E+00, 1.857845E-01, 2.119138E+00
, -3.920375E-02"
## [1] "Llh: -1.03407455418845E+03; Pars: -1.458816E+00, 1.874334E-01, 2.137447E+00
, -3.811115E-02"
## [1] "Llh: -1.03409451403280E+03; Pars: -1.459580E+00, 1.803286E-01, 2.136421E+00
, -2.831090E-02"
## [1] "Llh: -1.03409682103202E+03; Pars: -1.470434E+00, 1.821897E-01, 2.124629E+00
, -3.312274E-02"
## [1] "Llh: -1.03411371668177E+03; Pars: -1.439631E+00, 1.913937E-01, 2.161613E+00
, -3.149341E-02"
## [1] "Llh: -1.03410096810379E+03; Pars: -1.454859E+00, 1.880240E-01, 2.143157E+00
, -3.337525E-02"
## [1] "Llh: -1.03408770292604E+03; Pars: -1.449214E+00, 1.906724E-01, 2.140103E+00
, -3.630869E-02"
## [1] "Llh: -1.03408890945669E+03; Pars: -1.456712E+00, 1.884457E-01, 2.135264E+00
, -3.571371E-02"
## [1] "Llh: -1.03407496529918E+03; Pars: -1.428266E+00, 1.841397E-01, 2.174195E+00
, -2.737541E-02"
## [1] "Llh: -1.03407893887025E+03; Pars: -1.441721E+00, 1.853772E-01, 2.156667E+00
, -3.070095E-02"
## [1] "Llh: -1.03406079030157E+03; Pars: -1.442799E+00, 1.832631E-01, 2.150818E+00
, -3.167782E-02"
## [1] "Llh: -1.03404558812249E+03; Pars: -1.436889E+00, 1.808827E-01, 2.154658E+00
, -3.082910E-02"
## [1] "Llh: -1.03405345466667E+03; Pars: -1.427294E+00, 1.912355E-01, 2.166788E+00
, -3.800127E-02"
## [1] "Llh: -1.03405850891894E+03; Pars: -1.435146E+00, 1.885088E-01, 2.159156E+00
, -3.557868E-02"
## [1] "Llh: -1.03403497895033E+03; Pars: -1.426356E+00, 1.811733E-01, 2.176505E+00
, -3.084978E-02"
## [1] "Llh: -1.03401885760047E+03; Pars: -1.415367E+00, 1.764237E-01, 2.194937E+00
, -2.812032E-02"
## [1] "Llh: -1.03401371791458E+03; Pars: -1.440424E+00, 1.838480E-01, 2.152572E+00
, -4.015552E-02"
## [1] "Llh: -1.03399151021809E+03; Pars: -1.446632E+00, 1.837021E-01, 2.141841E+00
, -4.654557E-02"
## [1] "Llh: -1.03399426510108E+03; Pars: -1.405603E+00, 1.786886E-01, 2.191829E+00
, -3.363698E-02"
## [1] "Llh: -1.03400429277943E+03; Pars: -1.418298E+00, 1.808748E-01, 2.178105E+00
, -3.475552E-02"
## [1] "Llh: -1.03398371626529E+03; Pars: -1.424326E+00, 1.686131E-01, 2.174606E+00
, -3.156471E-02"
## [1] "Llh: -1.03398614853372E+03; Pars: -1.422850E+00, 1.573018E-01, 2.178526E+00
, -2.834643E-02"
## [1] "Llh: -1.03394842082239E+03; Pars: -1.408997E+00, 1.728310E-01, 2.196949E+00
, -3.910469E-02"
## [1] "Llh: -1.03392100025470E+03; Pars: -1.395726E+00, 1.688051E-01, 2.218405E+00
, -4.324249E-02"
## [1] "Llh: -1.03393061416989E+03; Pars: -1.419895E+00, 1.734808E-01, 2.168132E+00

```

```

, -4.937456E-02"
## [1] "Llh: -1.03394316178717E+03; Pars: -1.418758E+00, 1.742165E-01, 2.174802E+00
, -4.406100E-02"
## [1] "Llh: -1.03393436902685E+03; Pars: -1.437514E+00, 1.686119E-01, 2.159436E+00
, -5.172668E-02"
## [1] "Llh: -1.03393639010387E+03; Pars: -1.429308E+00, 1.711311E-01, 2.167489E+00
, -4.720426E-02"
## [1] "Llh: -1.03393352669234E+03; Pars: -1.393245E+00, 1.560533E-01, 2.218894E+00
, -4.140865E-02"
## [1] "Llh: -1.03392734616922E+03; Pars: -1.405962E+00, 1.629655E-01, 2.199374E+00
, -4.269288E-02"
## [1] "Llh: -1.03388537085115E+03; Pars: -1.404861E+00, 1.683186E-01, 2.197872E+00
, -6.195359E-02"
## [1] "Llh: -1.03387267604152E+03; Pars: -1.395466E+00, 1.681714E-01, 2.209598E+00
, -7.714803E-02"
## [1] "Llh: -1.03389989034842E+03; Pars: -1.373313E+00, 1.680994E-01, 2.238871E+00
, -5.450229E-02"
## [1] "Llh: -1.03389569034868E+03; Pars: -1.388421E+00, 1.682276E-01, 2.218742E+00
, -5.380839E-02"
## [1] "Llh: -1.03389571505896E+03; Pars: -1.374115E+00, 1.606040E-01, 2.255768E+00
, -5.907133E-02"
## [1] "Llh: -1.03389080609718E+03; Pars: -1.385069E+00, 1.638232E-01, 2.233532E+00
, -5.664714E-02"
## [1] "Llh: -1.03386185456579E+03; Pars: -1.376866E+00, 1.715481E-01, 2.240925E+00
, -7.273014E-02"
## [1] "Llh: -1.03385313346130E+03; Pars: -1.363110E+00, 1.758394E-01, 2.261994E+00
, -8.774877E-02"
## [1] "Llh: -1.03388364162079E+03; Pars: -1.370340E+00, 1.692257E-01, 2.243423E+00
, -9.443368E-02"
## [1] "Llh: -1.03386864358435E+03; Pars: -1.376529E+00, 1.691205E-01, 2.237142E+00
, -8.163588E-02"
## [1] "Llh: -1.03387234545642E+03; Pars: -1.371484E+00, 1.702497E-01, 2.252363E+00
, -9.778152E-02"
## [1] "Llh: -1.03386422065652E+03; Pars: -1.375648E+00, 1.697441E-01, 2.243910E+00
, -8.678824E-02"
## [1] "Llh: -1.03387402255658E+03; Pars: -1.370105E+00, 1.776145E-01, 2.242640E+00
, -1.100133E-01"
## [1] "Llh: -1.03386278932403E+03; Pars: -1.373791E+00, 1.741667E-01, 2.240360E+00
, -9.667177E-02"
## [1] "Llh: -1.03386567477823E+03; Pars: -1.350360E+00, 1.762640E-01, 2.282658E+00
, -9.927431E-02"
## [1] "Llh: -1.03386067875894E+03; Pars: -1.361129E+00, 1.742408E-01, 2.264170E+00
, -9.374274E-02"
## [1] "Llh: -1.03385314606490E+03; Pars: -1.360376E+00, 1.778750E-01, 2.268132E+00
, -1.008399E-01"
## [1] "Llh: -1.03385502196593E+03; Pars: -1.364349E+00, 1.756864E-01, 2.260344E+00
, -9.603888E-02"
## [1] "Llh: -1.03385735124315E+03; Pars: -1.353804E+00, 1.813168E-01, 2.273462E+00
, -1.027133E-01"
## [1] "Llh: -1.03385536539314E+03; Pars: -1.359143E+00, 1.784237E-01, 2.266038E+00

```

```

, -9.873207E-02"
## [1] "Llh: -1.03385495524648E+03; Pars: -1.348525E+00, 1.790228E-01, 2.290077E+00
, -9.385995E-02"
## [1] "Llh: -1.03385377861107E+03; Pars: -1.354677E+00, 1.778088E-01, 2.277546E+00
, -9.456291E-02"
## [1] "Llh: -1.03384722638738E+03; Pars: -1.357507E+00, 1.807326E-01, 2.272679E+00
, -9.719908E-02"
## [1] "Llh: -1.03384360741356E+03; Pars: -1.355709E+00, 1.839784E-01, 2.276945E+00
, -9.892725E-02"
## [1] "Llh: -1.03384624891883E+03; Pars: -1.357762E+00, 1.793271E-01, 2.276263E+00
, -9.230734E-02"
## [1] "Llh: -1.03384749442238E+03; Pars: -1.358107E+00, 1.791013E-01, 2.273703E+00
, -9.391352E-02"
## [1] "Llh: -1.03384219249107E+03; Pars: -1.363839E+00, 1.807012E-01, 2.264125E+00
, -9.534871E-02"
## [1] "Llh: -1.03383816976312E+03; Pars: -1.368509E+00, 1.821475E-01, 2.257444E+00
, -9.574161E-02"
## [1] "Llh: -1.03384461876009E+03; Pars: -1.362103E+00, 1.827712E-01, 2.268159E+00
, -8.652261E-02"
## [1] "Llh: -1.03384318194266E+03; Pars: -1.361671E+00, 1.815472E-01, 2.268152E+00
, -9.010193E-02"
## [1] "Llh: -1.03383696032996E+03; Pars: -1.358663E+00, 1.876607E-01, 2.277407E+00
, -1.007903E-01"
## [1] "Llh: -1.03383797535910E+03; Pars: -1.356460E+00, 1.935714E-01, 2.285153E+00
, -1.073111E-01"
## [1] "Llh: -1.03383532955891E+03; Pars: -1.364483E+00, 1.883398E-01, 2.263699E+00
, -1.004732E-01"
## [1] "Llh: -1.03383411658524E+03; Pars: -1.367891E+00, 1.928461E-01, 2.257443E+00
, -1.045561E-01"
## [1] "Llh: -1.03383337895336E+03; Pars: -1.372811E+00, 1.881223E-01, 2.253309E+00
, -9.666773E-02"
## [1] "Llh: -1.03383473738008E+03; Pars: -1.381667E+00, 1.901942E-01, 2.241583E+00
, -9.553797E-02"
## [1] "Llh: -1.03383124742066E+03; Pars: -1.372270E+00, 1.938411E-01, 2.254631E+00
, -1.087760E-01"
## [1] "Llh: -1.03383465539074E+03; Pars: -1.377686E+00, 1.999881E-01, 2.247900E+00
, -1.181130E-01"
## [1] "Llh: -1.03383791821787E+03; Pars: -1.367221E+00, 1.990876E-01, 2.263913E+00
, -1.096534E-01"
## [1] "Llh: -1.03383401487661E+03; Pars: -1.367543E+00, 1.948526E-01, 2.262294E+00
, -1.061755E-01"
## [1] "Llh: -1.03383367012173E+03; Pars: -1.381944E+00, 1.971703E-01, 2.236610E+00
, -1.072974E-01"
## [1] "Llh: -1.03383226149630E+03; Pars: -1.375986E+00, 1.947929E-01, 2.246740E+00
, -1.056706E-01"
## [1] "Llh: -1.03383200486223E+03; Pars: -1.376439E+00, 1.929584E-01, 2.251035E+00
, -1.040888E-01"
## [1] "Llh: -1.03383170651063E+03; Pars: -1.374283E+00, 1.929303E-01, 2.252635E+00
, -1.042056E-01"
## [1] "Llh: -1.03383107859304E+03; Pars: -1.380234E+00, 1.899907E-01, 2.241408E+00

```

```

, -1.014845E-01"
## [1] "Llh: -1.03383266641988E+03; Pars: -1.386743E+00, 1.875598E-01, 2.231037E+00
, -9.913894E-02"
## [1] "Llh: -1.03383237479714E+03; Pars: -1.378575E+00, 1.976552E-01, 2.244395E+00
, -1.134006E-01"
## [1] "Llh: -1.03383129660401E+03; Pars: -1.377126E+00, 1.952720E-01, 2.246620E+00
, -1.092174E-01"
## [1] "Llh: -1.03383078870290E+03; Pars: -1.375947E+00, 1.912242E-01, 2.250896E+00
, -1.061711E-01"
## [1] "Llh: -1.03383192681157E+03; Pars: -1.375927E+00, 1.894398E-01, 2.252977E+00
, -1.064213E-01"
## [1] "Llh: -1.03383042788235E+03; Pars: -1.378496E+00, 1.922337E-01, 2.244139E+00
, -1.086188E-01"
## [1] "Llh: -1.03383110938590E+03; Pars: -1.380619E+00, 1.918854E-01, 2.239903E+00
, -1.108255E-01"
## [1] "Llh: -1.03383126907048E+03; Pars: -1.376324E+00, 1.883728E-01, 2.248905E+00
, -1.033078E-01"
## [1] "Llh: -1.03383067806501E+03; Pars: -1.376524E+00, 1.900976E-01, 2.248334E+00
, -1.047852E-01"
## [1] "Llh: -1.03383187841687E+03; Pars: -1.383405E+00, 1.879320E-01, 2.237784E+00
, -1.017538E-01"
## [1] "Llh: -1.03383061725847E+03; Pars: -1.375023E+00, 1.923638E-01, 2.250407E+00
, -1.070204E-01"
## [1] "Llh: -1.03383131625305E+03; Pars: -1.372793E+00, 1.929689E-01, 2.255499E+00
, -1.118133E-01"
## [1] "Llh: -1.03383060415383E+03; Pars: -1.378360E+00, 1.907353E-01, 2.244922E+00
, -1.040667E-01"
## [1] "Llh: -1.03383052524693E+03; Pars: -1.378253E+00, 1.914911E-01, 2.243009E+00
, -1.060745E-01"
## [1] "Llh: -1.03383043536859E+03; Pars: -1.377675E+00, 1.914243E-01, 2.244978E+00
, -1.060986E-01"
## [1] "Llh: -1.03383052442862E+03; Pars: -1.378249E+00, 1.932809E-01, 2.243889E+00
, -1.081171E-01"
## [1] "Llh: -1.03383042360989E+03; Pars: -1.377817E+00, 1.924851E-01, 2.244999E+00
, -1.072841E-01"
## [1] "Llh: -1.03383052527601E+03; Pars: -1.381176E+00, 1.910754E-01, 2.239127E+00
, -1.060137E-01"
## [1] "Llh: -1.03383041442983E+03; Pars: -1.379628E+00, 1.913975E-01, 2.241941E+00
, -1.062654E-01"
## [1] "Llh: -1.03383060929821E+03; Pars: -1.378446E+00, 1.930350E-01, 2.243106E+00
, -1.100668E-01"
## [1] "Llh: -1.03383043683247E+03; Pars: -1.378382E+00, 1.913102E-01, 2.244468E+00
, -1.055667E-01"
## [1] "Llh: -1.03383043933906E+03; Pars: -1.378425E+00, 1.924601E-01, 2.243560E+00
, -1.085668E-01"
## [1] "Llh: -1.03383039530307E+03; Pars: -1.378392E+00, 1.915977E-01, 2.244241E+00
, -1.063167E-01"
## [1] "Llh: -1.03383040271325E+03; Pars: -1.379493E+00, 1.924327E-01, 2.242683E+00
, -1.081439E-01"
## [1] "Llh: -1.03383037963596E+03; Pars: -1.379037E+00, 1.921806E-01, 2.243256E+00

```

```

, -1.076326E-01"
## [1] "Llh: -1.03383049589938E+03; Pars: -1.378941E+00, 1.915967E-01, 2.243079E+00
, -1.051306E-01"
## [1] "Llh: -1.03383038325035E+03; Pars: -1.378607E+00, 1.920745E-01, 2.243874E+00
, -1.077468E-01"
## [1] "Llh: -1.03383046248851E+03; Pars: -1.380018E+00, 1.911400E-01, 2.241658E+00
, -1.066966E-01"
## [1] "Llh: -1.03383038482789E+03; Pars: -1.378366E+00, 1.921488E-01, 2.244164E+00
, -1.071372E-01"
## [1] "Llh: -1.03383041832578E+03; Pars: -1.377576E+00, 1.926033E-01, 2.245828E+00
, -1.081513E-01"
## [1] "Llh: -1.03383038501050E+03; Pars: -1.379114E+00, 1.916989E-01, 2.242912E+00
, -1.067369E-01"
## [1] "Llh: -1.03383047409465E+03; Pars: -1.379796E+00, 1.921806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383037963596E+03; Pars: -1.379037E+00, 1.921806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383052830949E+03; Pars: -1.379417E+00, 1.931806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383053211393E+03; Pars: -1.379417E+00, 1.911806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383079382415E+03; Pars: -1.379417E+00, 1.921806E-01, 2.245501E+00
, -1.076326E-01"
## [1] "Llh: -1.03383050976911E+03; Pars: -1.379417E+00, 1.921806E-01, 2.241014E+00
, -1.076326E-01"
## [1] "Llh: -1.03383042898270E+03; Pars: -1.379417E+00, 1.921806E-01, 2.243256E+00
, -1.066326E-01"
## [1] "Llh: -1.03383046572189E+03; Pars: -1.379417E+00, 1.921806E-01, 2.243256E+00
, -1.086326E-01"
## [1] "Llh: -1.03383037963596E+03; Pars: -1.379037E+00, 1.921806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383045989552E+03; Pars: -1.378280E+00, 1.921806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383052417964E+03; Pars: -1.378659E+00, 1.931806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383052215737E+03; Pars: -1.378659E+00, 1.911806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383050585190E+03; Pars: -1.378659E+00, 1.921806E-01, 2.245501E+00
, -1.076326E-01"
## [1] "Llh: -1.03383078347147E+03; Pars: -1.378659E+00, 1.921806E-01, 2.241014E+00
, -1.076326E-01"
## [1] "Llh: -1.03383042372758E+03; Pars: -1.378659E+00, 1.921806E-01, 2.243256E+00
, -1.066326E-01"
## [1] "Llh: -1.03383045665773E+03; Pars: -1.378659E+00, 1.921806E-01, 2.243256E+00
, -1.086326E-01"
## [1] "Llh: -1.03383052830949E+03; Pars: -1.379417E+00, 1.931806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383052417964E+03; Pars: -1.378659E+00, 1.931806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383087960165E+03; Pars: -1.379037E+00, 1.941806E-01, 2.243256E+00

```

, -1.076326E-01"
[1] "Llh: -1.03383037963596E+03; Pars: -1.379037E+00, 1.921806E-01, 2.243256E+00
, -1.076326E-01"
[1] "Llh: -1.03383076760007E+03; Pars: -1.379037E+00, 1.931806E-01, 2.245501E+00
, -1.076326E-01"
[1] "Llh: -1.03383073466782E+03; Pars: -1.379037E+00, 1.931806E-01, 2.241014E+00
, -1.076326E-01"
[1] "Llh: -1.03383063339440E+03; Pars: -1.379037E+00, 1.931806E-01, 2.243256E+00
, -1.066326E-01"
[1] "Llh: -1.03383046001083E+03; Pars: -1.379037E+00, 1.931806E-01, 2.243256E+00
, -1.086326E-01"
[1] "Llh: -1.03383053211393E+03; Pars: -1.379417E+00, 1.911806E-01, 2.243256E+00
, -1.076326E-01"
[1] "Llh: -1.03383052215737E+03; Pars: -1.378659E+00, 1.911806E-01, 2.243256E+00
, -1.076326E-01"
[1] "Llh: -1.03383037963596E+03; Pars: -1.379037E+00, 1.921806E-01, 2.243256E+00
, -1.076326E-01"
[1] "Llh: -1.03383088138499E+03; Pars: -1.379037E+00, 1.901806E-01, 2.243256E+00
, -1.076326E-01"
[1] "Llh: -1.03383073857511E+03; Pars: -1.379037E+00, 1.911806E-01, 2.245501E+00
, -1.076326E-01"
[1] "Llh: -1.03383076557216E+03; Pars: -1.379037E+00, 1.911806E-01, 2.241014E+00
, -1.076326E-01"
[1] "Llh: -1.03383042606255E+03; Pars: -1.379037E+00, 1.911806E-01, 2.243256E+00
, -1.066326E-01"
[1] "Llh: -1.03383066912046E+03; Pars: -1.379037E+00, 1.911806E-01, 2.243256E+00
, -1.086326E-01"
[1] "Llh: -1.03383079382415E+03; Pars: -1.379417E+00, 1.921806E-01, 2.245501E+00
, -1.076326E-01"
[1] "Llh: -1.03383050585190E+03; Pars: -1.378659E+00, 1.921806E-01, 2.245501E+00
, -1.076326E-01"
[1] "Llh: -1.03383076760007E+03; Pars: -1.379037E+00, 1.931806E-01, 2.245501E+00
, -1.076326E-01"
[1] "Llh: -1.03383073857511E+03; Pars: -1.379037E+00, 1.911806E-01, 2.245501E+00
, -1.076326E-01"
[1] "Llh: -1.03383136969612E+03; Pars: -1.379037E+00, 1.921806E-01, 2.247747E+00
, -1.076326E-01"
[1] "Llh: -1.03383037963596E+03; Pars: -1.379037E+00, 1.921806E-01, 2.243256E+00
, -1.076326E-01"
[1] "Llh: -1.03383066145625E+03; Pars: -1.379037E+00, 1.921806E-01, 2.245501E+00
, -1.066326E-01"
[1] "Llh: -1.03383067895367E+03; Pars: -1.379037E+00, 1.921806E-01, 2.245501E+00
, -1.086326E-01"
[1] "Llh: -1.03383050976911E+03; Pars: -1.379417E+00, 1.921806E-01, 2.241014E+00
, -1.076326E-01"
[1] "Llh: -1.03383078347147E+03; Pars: -1.378659E+00, 1.921806E-01, 2.241014E+00
, -1.076326E-01"
[1] "Llh: -1.03383073466782E+03; Pars: -1.379037E+00, 1.931806E-01, 2.241014E+00
, -1.076326E-01"
[1] "Llh: -1.03383076557216E+03; Pars: -1.379037E+00, 1.911806E-01, 2.241014E+00

```

, -1.076326E-01"
## [1] "Llh: -1.03383037963596E+03; Pars: -1.379037E+00, 1.921806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383136360297E+03; Pars: -1.379037E+00, 1.921806E-01, 2.238774E+00
, -1.076326E-01"
## [1] "Llh: -1.03383064103073E+03; Pars: -1.379037E+00, 1.921806E-01, 2.241014E+00
, -1.066326E-01"
## [1] "Llh: -1.03383069330454E+03; Pars: -1.379037E+00, 1.921806E-01, 2.241014E+00
, -1.086326E-01"
## [1] "Llh: -1.03383042898270E+03; Pars: -1.379417E+00, 1.921806E-01, 2.243256E+00
, -1.066326E-01"
## [1] "Llh: -1.03383042372758E+03; Pars: -1.378659E+00, 1.921806E-01, 2.243256E+00
, -1.066326E-01"
## [1] "Llh: -1.03383063339440E+03; Pars: -1.379037E+00, 1.931806E-01, 2.243256E+00
, -1.066326E-01"
## [1] "Llh: -1.03383042606255E+03; Pars: -1.379037E+00, 1.911806E-01, 2.243256E+00
, -1.066326E-01"
## [1] "Llh: -1.03383066145625E+03; Pars: -1.379037E+00, 1.921806E-01, 2.245501E+00
, -1.066326E-01"
## [1] "Llh: -1.03383064103073E+03; Pars: -1.379037E+00, 1.921806E-01, 2.241014E+00
, -1.066326E-01"
## [1] "Llh: -1.03383051402636E+03; Pars: -1.379037E+00, 1.921806E-01, 2.243256E+00
, -1.056326E-01"
## [1] "Llh: -1.03383037963596E+03; Pars: -1.379037E+00, 1.921806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383046572189E+03; Pars: -1.379417E+00, 1.921806E-01, 2.243256E+00
, -1.086326E-01"
## [1] "Llh: -1.03383045665773E+03; Pars: -1.378659E+00, 1.921806E-01, 2.243256E+00
, -1.086326E-01"
## [1] "Llh: -1.03383046001083E+03; Pars: -1.379037E+00, 1.931806E-01, 2.243256E+00
, -1.086326E-01"
## [1] "Llh: -1.03383066912046E+03; Pars: -1.379037E+00, 1.911806E-01, 2.243256E+00
, -1.086326E-01"
## [1] "Llh: -1.03383067895367E+03; Pars: -1.379037E+00, 1.921806E-01, 2.245501E+00
, -1.086326E-01"
## [1] "Llh: -1.03383069330454E+03; Pars: -1.379037E+00, 1.921806E-01, 2.241014E+00
, -1.086326E-01"
## [1] "Llh: -1.03383037963596E+03; Pars: -1.379037E+00, 1.921806E-01, 2.243256E+00
, -1.076326E-01"
## [1] "Llh: -1.03383058361935E+03; Pars: -1.379037E+00, 1.921806E-01, 2.243256E+00
, -1.096326E-01"
## Currently fitting: symmetric ghyp
## [1] "Llh: -1.06810785299651E+03; Pars: 1.000000E+00, 5.000000E-01, 1.733995E-01
, 1.320976E+00"
## [1] "Llh: -1.06867133639430E+03; Pars: 1.100000E+00, 5.000000E-01, 1.733995E-01
, 1.320976E+00"
## [1] "Llh: -1.06818839248668E+03; Pars: 1.000000E+00, 5.525855E-01, 1.733995E-01
, 1.320976E+00"
## [1] "Llh: -1.07058141292037E+03; Pars: 1.000000E+00, 5.000000E-01, 2.733995E-01
, 1.320976E+00"

```

```

## [1] "Llh: -1.05003986865477E+03; Pars: 1.000000E+00, 5.000000E-01, 1.733995E-01
, 1.459904E+00"
## [1] "Llh: -1.05908649822038E+03; Pars: 1.050000E+00, 5.256355E-01, 7.339950E-02
, 1.388704E+00"
## [1] "Llh: -1.06060338485541E+03; Pars: 1.037500E+00, 5.191060E-01, 1.233995E-01
, 1.371453E+00"
## [1] "Llh: -1.05354816221849E+03; Pars: 9.250000E-01, 5.389421E-01, 1.233995E-01
, 1.423859E+00"
## [1] "Llh: -1.05680066079964E+03; Pars: 9.687500E-01, 5.289311E-01, 1.358995E-01
, 1.397411E+00"
## [1] "Llh: -1.04848793730888E+03; Pars: 9.875000E-01, 4.815972E-01, 9.839950E-02
, 1.478268E+00"
## [1] "Llh: -1.04269711012224E+03; Pars: 9.812500E-01, 4.495999E-01, 6.089950E-02
, 1.563803E+00"
## [1] "Llh: -1.04078343588872E+03; Pars: 9.781250E-01, 5.047095E-01, 4.214950E-02
, 1.608410E+00"
## [1] "Llh: -1.03839402569320E+03; Pars: 9.671875E-01, 5.070809E-01, -2.347550E-02
, 1.774792E+00"
## [1] "Llh: -1.03541840381896E+03; Pars: 8.867187E-01, 4.715449E-01, 9.371200E-02
, 1.729621E+00"
## [1] "Llh: -1.03463619205967E+03; Pars: 8.050781E-01, 4.466242E-01, 1.038683E-01
, 1.930285E+00"
## [1] "Llh: -1.03723598126058E+03; Pars: 9.517578E-01, 4.186641E-01, 3.394638E-02
, 1.964132E+00"
## [1] "Llh: -1.03541346901966E+03; Pars: 9.450684E-01, 4.459486E-01, 5.630966E-02
, 1.812362E+00"
## [1] "Llh: -1.04486557412009E+03; Pars: 8.492920E-01, 4.261822E-01, -7.459854E-02
, 2.134389E+00"
## [1] "Llh: -1.03788562130440E+03; Pars: 8.869690E-01, 4.435463E-01, -1.259903E-02
, 1.941048E+00"
## [1] "Llh: -1.04588699407283E+03; Pars: 8.209015E-01, 4.707555E-01, 1.152189E-03
, 2.219949E+00"
## [1] "Llh: -1.03698211976579E+03; Pars: 9.411629E-01, 4.547980E-01, 4.596267E-02
, 1.706956E+00"
## [1] "Llh: -1.03415534638044E+03; Pars: 8.219517E-01, 3.952893E-01, 1.202463E-01
, 1.918293E+00"
## [1] "Llh: -1.03470768676805E+03; Pars: 7.493338E-01, 3.490068E-01, 1.921072E-01
, 1.994337E+00"
## [1] "Llh: -1.03473984935401E+03; Pars: 8.696615E-01, 4.266201E-01, 1.757925E-01
, 1.743675E+00"
## [1] "Llh: -1.03417180975997E+03; Pars: 8.739884E-01, 4.307901E-01, 1.286946E-01
, 1.791052E+00"
## [1] "Llh: -1.03596035469650E+03; Pars: 7.818804E-01, 4.049351E-01, 1.585967E-01
, 2.031058E+00"
## [1] "Llh: -1.03458818079750E+03; Pars: 8.217010E-01, 4.168633E-01, 1.304382E-01
, 1.944677E+00"
## [1] "Llh: -1.03449379667292E+03; Pars: 7.162912E-01, 3.992763E-01, 1.853140E-01
, 1.981532E+00"
## [1] "Llh: -1.03409595877991E+03; Pars: 7.734855E-01, 4.104652E-01, 1.530629E-01
, 1.937814E+00"

```

```

## [1] "Llh: -1.03372237463439E+03; Pars: 8.404852E-01, 3.821934E-01, 1.623527E-01
, 1.864103E+00"
## [1] "Llh: -1.03390669500704E+03; Pars: 8.581887E-01, 3.535523E-01, 1.915950E-01
, 1.831867E+00"
## [1] "Llh: -1.03372149582429E+03; Pars: 8.332544E-01, 3.920816E-01, 1.517401E-01
, 1.811570E+00"
## [1] "Llh: -1.03443319803192E+03; Pars: 8.390310E-01, 3.802488E-01, 1.623910E-01
, 1.748473E+00"
## [1] "Llh: -1.03439406546886E+03; Pars: 7.606000E-01, 3.619593E-01, 1.650064E-01
, 1.978189E+00"
## [1] "Llh: -1.03378878512957E+03; Pars: 8.456413E-01, 4.124433E-01, 1.377725E-01
, 1.836108E+00"
## [1] "Llh: -1.03386222703288E+03; Pars: 8.244815E-01, 4.029351E-01, 1.822179E-01
, 1.806977E+00"
## [1] "Llh: -1.03367131292409E+03; Pars: 8.238490E-01, 4.010099E-01, 1.667250E-01
, 1.834185E+00"
## [1] "Llh: -1.03476526527274E+03; Pars: 8.981294E-01, 3.835422E-01, 1.562322E-01
, 1.740288E+00"
## [1] "Llh: -1.03370797087728E+03; Pars: 8.046465E-01, 4.035622E-01, 1.538552E-01
, 1.886424E+00"
## [1] "Llh: -1.03361111308395E+03; Pars: 8.054763E-01, 3.775708E-01, 1.795640E-01
, 1.861683E+00"
## [1] "Llh: -1.03371119913717E+03; Pars: 7.853937E-01, 3.612563E-01, 2.004597E-01
, 1.874604E+00"
## [1] "Llh: -1.03352863232266E+03; Pars: 7.931279E-01, 4.049832E-01, 1.635894E-01
, 1.832533E+00"
## [1] "Llh: -1.03350356975502E+03; Pars: 7.694493E-01, 4.168828E-01, 1.642077E-01
, 1.816950E+00"
## [1] "Llh: -1.03365089377475E+03; Pars: 7.684562E-01, 4.070638E-01, 1.804359E-01
, 1.888471E+00"
## [1] "Llh: -1.03357020510304E+03; Pars: 7.846557E-01, 4.032654E-01, 1.732619E-01
, 1.868945E+00"
## [1] "Llh: -1.03375431611531E+03; Pars: 7.870686E-01, 3.953381E-01, 1.880240E-01
, 1.805115E+00"
## [1] "Llh: -1.03358382740470E+03; Pars: 8.002520E-01, 4.014903E-01, 1.623974E-01
, 1.865760E+00"
## [1] "Llh: -1.03342205598927E+03; Pars: 7.560676E-01, 3.980926E-01, 1.729905E-01
, 1.872437E+00"
## [1] "Llh: -1.03336565361096E+03; Pars: 7.221769E-01, 3.966420E-01, 1.761233E-01
, 1.891861E+00"
## [1] "Llh: -1.03333751485599E+03; Pars: 7.327907E-01, 4.333522E-01, 1.584312E-01
, 1.859673E+00"
## [1] "Llh: -1.03328297661394E+03; Pars: 6.964479E-01, 4.642611E-01, 1.478649E-01
, 1.858669E+00"
## [1] "Llh: -1.03316375940349E+03; Pars: 6.861128E-01, 4.382359E-01, 1.683315E-01
, 1.852079E+00"
## [1] "Llh: -1.03300842639538E+03; Pars: 6.290432E-01, 4.578512E-01, 1.712985E-01
, 1.845277E+00"
## [1] "Llh: -1.03296961326611E+03; Pars: 6.239029E-01, 4.648990E-01, 1.564852E-01
, 1.837178E+00"

```

```

## [1] "Llh: -1.03283759866255E+03; Pars: 5.435265E-01, 4.991631E-01, 1.480969E-01
, 1.821497E+00"
## [1] "Llh: -1.03281942368687E+03; Pars: 5.261480E-01, 4.920961E-01, 1.574841E-01
, 1.892116E+00"
## [1] "Llh: -1.03293160874592E+03; Pars: 4.044973E-01, 5.346479E-01, 1.541223E-01
, 1.930857E+00"
## [1] "Llh: -1.03298760359439E+03; Pars: 4.754059E-01, 5.760907E-01, 1.362488E-01
, 1.817317E+00"
## [1] "Llh: -1.03288128232432E+03; Pars: 5.370987E-01, 5.247686E-01, 1.462175E-01
, 1.835673E+00"
## [1] "Llh: -1.03250873099137E+03; Pars: 4.214603E-01, 5.232750E-01, 1.636836E-01
, 1.838292E+00"
## [1] "Llh: -1.03234931103018E+03; Pars: 2.839665E-01, 5.555380E-01, 1.715930E-01
, 1.828188E+00"
## [1] "Llh: -1.03248415849219E+03; Pars: 3.163266E-01, 5.844706E-01, 1.403973E-01
, 1.843040E+00"
## [1] "Llh: -1.03251360279065E+03; Pars: 3.945058E-01, 5.498612E-01, 1.481226E-01
, 1.843599E+00"
## [1] "Llh: -1.03220148777016E+03; Pars: 2.978851E-01, 5.381664E-01, 1.625682E-01
, 1.856396E+00"
## [1] "Llh: -1.03199386653807E+03; Pars: 1.782783E-01, 5.449931E-01, 1.707435E-01
, 1.866845E+00"
## [1] "Llh: -1.03220661349426E+03; Pars: 1.088332E-01, 5.911752E-01, 1.720120E-01
, 1.893988E+00"
## [1] "Llh: -1.03218362065025E+03; Pars: 2.175065E-01, 5.666929E-01, 1.660332E-01
, 1.875600E+00"
## [1] "Llh: -1.03230595852828E+03; Pars: -2.810899E-02, 6.435136E-01, 1.668994E-01
, 1.815325E+00"
## [1] "Llh: -1.03216755827577E+03; Pars: 1.104552E-01, 6.017703E-01, 1.645456E-01
, 1.834225E+00"
## [1] "Llh: -1.03206534147631E+03; Pars: 7.877672E-02, 5.497674E-01, 1.960604E-01
, 1.859201E+00"
## [1] "Llh: -1.03206139141513E+03; Pars: 1.381642E-01, 5.582451E-01, 1.821446E-01
, 1.855147E+00"
## [1] "Llh: -1.03196207764366E+03; Pars: 3.823565E-02, 5.798070E-01, 1.701405E-01
, 1.888073E+00"
## [1] "Llh: -1.03205104518122E+03; Pars: -8.462977E-02, 5.923362E-01, 1.694143E-01
, 1.918747E+00"
## [1] "Llh: -1.03194706898924E+03; Pars: 1.506018E-02, 5.749331E-01, 1.777539E-01
, 1.846456E+00"
## [1] "Llh: -1.03199398766403E+03; Pars: -8.616299E-02, 5.790980E-01, 1.836142E-01
, 1.832054E+00"
## [1] "Llh: -1.03187721688760E+03; Pars: 7.441393E-02, 5.292094E-01, 1.858457E-01
, 1.894391E+00"
## [1] "Llh: -1.03192935713066E+03; Pars: 5.639327E-02, 4.962791E-01, 1.964957E-01
, 1.925209E+00"
## [1] "Llh: -1.03179963158346E+03; Pars: 1.482987E-02, 5.554369E-01, 1.700972E-01
, 1.892733E+00"
## [1] "Llh: -1.03175814455148E+03; Pars: -4.683729E-02, 5.540381E-01, 1.640735E-01
, 1.911811E+00"

```

```

## [1] "Llh: -1.03183019672245E+03; Pars: -1.378421E-01, 5.736447E-01, 1.781632E-01
, 1.903390E+00"
## [1] "Llh: -1.03181003990125E+03; Pars: -5.881199E-02, 5.663436E-01, 1.763083E-01
, 1.894187E+00"
## [1] "Llh: -1.03170577609763E+03; Pars: -4.632324E-02, 5.329038E-01, 1.818501E-01
, 1.885035E+00"
## [1] "Llh: -1.03168897401225E+03; Pars: -8.860268E-02, 5.108948E-01, 1.877050E-01
, 1.883518E+00"
## [1] "Llh: -1.03174618223600E+03; Pars: -7.497920E-02, 5.066080E-01, 1.792123E-01
, 1.946770E+00"
## [1] "Llh: -1.03170969474903E+03; Pars: -5.246935E-02, 5.228876E-01, 1.788477E-01
, 1.921192E+00"
## [1] "Llh: -1.03161687357134E+03; Pars: -1.977746E-01, 5.470817E-01, 1.676215E-01
, 1.910885E+00"
## [1] "Llh: -1.03166431642524E+03; Pars: -3.338689E-01, 5.562429E-01, 1.585095E-01
, 1.919186E+00"
## [1] "Llh: -1.03153612774173E+03; Pars: -1.340300E-01, 5.024419E-01, 1.728155E-01
, 1.919495E+00"
## [1] "Llh: -1.03150373777960E+03; Pars: -1.716390E-01, 4.732480E-01, 1.710691E-01
, 1.932275E+00"
## [1] "Llh: -1.03162418182683E+03; Pars: -2.084055E-01, 4.746798E-01, 1.885482E-01
, 1.911952E+00"
## [1] "Llh: -1.03156702447308E+03; Pars: -1.680134E-01, 4.933845E-01, 1.824295E-01
, 1.911917E+00"
## [1] "Llh: -1.03153295350343E+03; Pars: -2.605455E-01, 4.885630E-01, 1.755649E-01
, 1.898018E+00"
## [1] "Llh: -1.03152138108999E+03; Pars: -2.085264E-01, 4.969269E-01, 1.763856E-01
, 1.903785E+00"
## [1] "Llh: -1.03149552504736E+03; Pars: -2.843740E-01, 4.931488E-01, 1.610479E-01
, 1.946371E+00"
## [1] "Llh: -1.03163699263355E+03; Pars: -3.822597E-01, 4.845083E-01, 1.477194E-01
, 1.978580E+00"
## [1] "Llh: -1.03162933353533E+03; Pars: -2.185019E-01, 4.372403E-01, 1.778446E-01
, 1.936227E+00"
## [1] "Llh: -1.03152471957034E+03; Pars: -2.029564E-01, 5.172722E-01, 1.701773E-01
, 1.917189E+00"
## [1] "Llh: -1.03146849465397E+03; Pars: -2.657345E-01, 4.964251E-01, 1.569105E-01
, 1.937848E+00"
## [1] "Llh: -1.03152335672034E+03; Pars: -3.145950E-01, 4.979525E-01, 1.441509E-01
, 1.950945E+00"
## [1] "Llh: -1.03146767952808E+03; Pars: -2.621806E-01, 4.638605E-01, 1.625293E-01
, 1.942903E+00"
## [1] "Llh: -1.03152217489350E+03; Pars: -2.917926E-01, 4.392598E-01, 1.587053E-01
, 1.955889E+00"
## [1] "Llh: -1.03156214038336E+03; Pars: -2.834376E-01, 4.665105E-01, 1.493928E-01
, 1.976582E+00"
## [1] "Llh: -1.03147343546499E+03; Pars: -2.272542E-01, 4.891418E-01, 1.696374E-01
, 1.921729E+00"
## [1] "Llh: -1.03148868242618E+03; Pars: -3.481327E-01, 4.980101E-01, 1.539934E-01
, 1.942117E+00"

```

```

## [1] "Llh: -1.03146471117498E+03; Pars: -3.040093E-01, 4.917007E-01, 1.582623E-01
, 1.939652E+00"
## [1] "Llh: -1.03144842349351E+03; Pars: -2.452152E-01, 4.772109E-01, 1.626218E-01
, 1.924721E+00"
## [1] "Llh: -1.03147727503184E+03; Pars: -2.256358E-01, 4.694362E-01, 1.634087E-01
, 1.913987E+00"
## [1] "Llh: -1.03146635692118E+03; Pars: -3.113155E-01, 4.752164E-01, 1.505245E-01
, 1.950918E+00"
## [1] "Llh: -1.03145228097995E+03; Pars: -2.903002E-01, 4.786601E-01, 1.553027E-01
, 1.943580E+00"
## [1] "Llh: -1.03146933777426E+03; Pars: -2.851181E-01, 4.597896E-01, 1.624476E-01
, 1.937550E+00"
## [1] "Llh: -1.03145295187586E+03; Pars: -2.705804E-01, 4.870013E-01, 1.582947E-01
, 1.937774E+00"
## [1] "Llh: -1.03146246612519E+03; Pars: -2.928720E-01, 5.041931E-01, 1.547115E-01
, 1.929956E+00"
## [1] "Llh: -1.03145011014272E+03; Pars: -2.851991E-01, 4.937925E-01, 1.566660E-01
, 1.933184E+00"
## [1] "Llh: -1.03144091109557E+03; Pars: -2.416382E-01, 4.766563E-01, 1.581803E-01
, 1.929965E+00"
## [1] "Llh: -1.03145414173152E+03; Pars: -2.104527E-01, 4.693075E-01, 1.581393E-01
, 1.925140E+00"
## [1] "Llh: -1.03143845691711E+03; Pars: -2.605960E-01, 4.761169E-01, 1.580906E-01
, 1.927940E+00"
## [1] "Llh: -1.03144725213227E+03; Pars: -2.556038E-01, 4.707663E-01, 1.579886E-01
, 1.923042E+00"
## [1] "Llh: -1.03145057453764E+03; Pars: -2.260241E-01, 4.831251E-01, 1.624766E-01
, 1.914431E+00"
## [1] "Llh: -1.03144130411319E+03; Pars: -2.420931E-01, 4.820050E-01, 1.606831E-01
, 1.921677E+00"
## [1] "Llh: -1.03148754911809E+03; Pars: -2.095721E-01, 4.626961E-01, 1.631220E-01
, 1.918988E+00"
## [1] "Llh: -1.03143859539233E+03; Pars: -2.662924E-01, 4.858278E-01, 1.582800E-01
, 1.929626E+00"
## [1] "Llh: -1.03143421279798E+03; Pars: -2.600946E-01, 4.830766E-01, 1.549952E-01
, 1.929880E+00"
## [1] "Llh: -1.03143692176534E+03; Pars: -2.675343E-01, 4.860365E-01, 1.511819E-01
, 1.932465E+00"
## [1] "Llh: -1.03144027595213E+03; Pars: -2.722175E-01, 4.788033E-01, 1.540899E-01
, 1.937059E+00"
## [1] "Llh: -1.03143729964227E+03; Pars: -2.646864E-01, 4.796017E-01, 1.557382E-01
, 1.933202E+00"
## [1] "Llh: -1.03143504350936E+03; Pars: -2.841965E-01, 4.856697E-01, 1.553717E-01
, 1.930357E+00"
## [1] "Llh: -1.03143485775761E+03; Pars: -2.735569E-01, 4.834005E-01, 1.560739E-01
, 1.930259E+00"
## [1] "Llh: -1.03143569092845E+03; Pars: -2.631746E-01, 4.753094E-01, 1.541690E-01
, 1.931013E+00"
## [1] "Llh: -1.03143491536481E+03; Pars: -2.639540E-01, 4.779174E-01, 1.551968E-01
, 1.930666E+00"

```

```

## [1] "Llh: -1.03143925693170E+03; Pars: -2.705500E-01, 4.859200E-01, 1.529114E-01
, 1.934068E+00"
## [1] "Llh: -1.03143571938208E+03; Pars: -2.630845E-01, 4.785490E-01, 1.567958E-01
, 1.929470E+00"
## [1] "Llh: -1.03143248988633E+03; Pars: -2.656586E-01, 4.818596E-01, 1.557926E-01
, 1.926941E+00"
## [1] "Llh: -1.03143144630846E+03; Pars: -2.661447E-01, 4.829925E-01, 1.558198E-01
, 1.923818E+00"
## [1] "Llh: -1.03143190981089E+03; Pars: -2.687907E-01, 4.851564E-01, 1.542470E-01
, 1.927838E+00"
## [1] "Llh: -1.03143236026944E+03; Pars: -2.673641E-01, 4.834961E-01, 1.548842E-01
, 1.928246E+00"
## [1] "Llh: -1.03143262067064E+03; Pars: -2.703394E-01, 4.894629E-01, 1.553712E-01
, 1.925231E+00"
## [1] "Llh: -1.03143225327356E+03; Pars: -2.687431E-01, 4.865507E-01, 1.553276E-01
, 1.926589E+00"
## [1] "Llh: -1.03143020886929E+03; Pars: -2.583296E-01, 4.854852E-01, 1.541209E-01
, 1.923806E+00"
## [1] "Llh: -1.03142972022032E+03; Pars: -2.507160E-01, 4.865310E-01, 1.531445E-01
, 1.920588E+00"
## [1] "Llh: -1.03142949504869E+03; Pars: -2.671026E-01, 4.875446E-01, 1.542742E-01
, 1.919546E+00"
## [1] "Llh: -1.03143101257929E+03; Pars: -2.706066E-01, 4.897940E-01, 1.539137E-01
, 1.914399E+00"
## [1] "Llh: -1.03143012848010E+03; Pars: -2.576339E-01, 4.845576E-01, 1.534152E-01
, 1.919307E+00"
## [1] "Llh: -1.03142967755568E+03; Pars: -2.604112E-01, 4.850551E-01, 1.538933E-01
, 1.921125E+00"
## [1] "Llh: -1.03143276308800E+03; Pars: -2.533966E-01, 4.858994E-01, 1.543189E-01
, 1.914722E+00"
## [1] "Llh: -1.03143019782989E+03; Pars: -2.649422E-01, 4.853421E-01, 1.542650E-01
, 1.924550E+00"
## [1] "Llh: -1.03142917063358E+03; Pars: -2.554413E-01, 4.892621E-01, 1.519687E-01
, 1.919088E+00"
## [1] "Llh: -1.03143048644804E+03; Pars: -2.500895E-01, 4.924273E-01, 1.500431E-01
, 1.916727E+00"
## [1] "Llh: -1.03143027241879E+03; Pars: -2.518934E-01, 4.888558E-01, 1.523753E-01
, 1.915633E+00"
## [1] "Llh: -1.03142949029457E+03; Pars: -2.616800E-01, 4.862181E-01, 1.537926E-01
, 1.922317E+00"
## [1] "Llh: -1.03142912634218E+03; Pars: -2.716015E-01, 4.875045E-01, 1.538199E-01
, 1.920449E+00"
## [1] "Llh: -1.03142949165070E+03; Pars: -2.820443E-01, 4.879919E-01, 1.541576E-01
, 1.920379E+00"
## [1] "Llh: -1.03142910836174E+03; Pars: -2.675015E-01, 4.902208E-01, 1.530344E-01
, 1.919574E+00"
## [1] "Llh: -1.03142975037757E+03; Pars: -2.710466E-01, 4.928242E-01, 1.526049E-01
, 1.918799E+00"
## [1] "Llh: -1.03142909281883E+03; Pars: -2.610095E-01, 4.890544E-01, 1.520335E-01
, 1.921168E+00"

```

```

## [1] "Llh: -1.03142981290953E+03; Pars: -2.579629E-01, 4.898111E-01, 1.509132E-01
, 1.921980E+00"
## [1] "Llh: -1.03142925776603E+03; Pars: -2.660969E-01, 4.918168E-01, 1.516357E-01
, 1.917825E+00"
## [1] "Llh: -1.03142897338713E+03; Pars: -2.649927E-01, 4.904111E-01, 1.521749E-01
, 1.918947E+00"
## [1] "Llh: -1.03142927104211E+03; Pars: -2.771113E-01, 4.893306E-01, 1.535627E-01
, 1.920981E+00"
## [1] "Llh: -1.03142896134010E+03; Pars: -2.608588E-01, 4.892792E-01, 1.523672E-01
, 1.919561E+00"
## [1] "Llh: -1.03142988756380E+03; Pars: -2.555797E-01, 4.919879E-01, 1.509851E-01
, 1.919176E+00"
## [1] "Llh: -1.03142890675560E+03; Pars: -2.675961E-01, 4.886215E-01, 1.531112E-01
, 1.920131E+00"
## [1] "Llh: -1.03142892350443E+03; Pars: -2.597270E-01, 4.884630E-01, 1.518090E-01
, 1.920329E+00"
## [1] "Llh: -1.03142888609018E+03; Pars: -2.616707E-01, 4.889019E-01, 1.521153E-01
, 1.920140E+00"
## [1] "Llh: -1.03142902069007E+03; Pars: -2.665496E-01, 4.895516E-01, 1.528508E-01
, 1.918222E+00"
## [1] "Llh: -1.03142890775002E+03; Pars: -2.651646E-01, 4.894273E-01, 1.526465E-01
, 1.918958E+00"
## [1] "Llh: -1.03142894224571E+03; Pars: -2.626524E-01, 4.877073E-01, 1.529452E-01
, 1.920448E+00"
## [1] "Llh: -1.03142888696536E+03; Pars: -2.632374E-01, 4.883818E-01, 1.527526E-01
, 1.920073E+00"
## [1] "Llh: -1.03142882881245E+03; Pars: -2.679756E-01, 4.883871E-01, 1.529456E-01
, 1.920090E+00"
## [1] "Llh: -1.03142887250702E+03; Pars: -2.715340E-01, 4.879417E-01, 1.532349E-01
, 1.920354E+00"
## [1] "Llh: -1.03142888856692E+03; Pars: -2.650753E-01, 4.877203E-01, 1.528159E-01
, 1.921259E+00"
## [1] "Llh: -1.03142885156194E+03; Pars: -2.650976E-01, 4.881465E-01, 1.527736E-01
, 1.920684E+00"
## [1] "Llh: -1.03142886033953E+03; Pars: -2.613946E-01, 4.882871E-01, 1.521824E-01
, 1.920363E+00"
## [1] "Llh: -1.03142883586860E+03; Pars: -2.629450E-01, 4.883706E-01, 1.524146E-01
, 1.920305E+00"
## [1] "Llh: -1.03142877898685E+03; Pars: -2.656070E-01, 4.885210E-01, 1.523720E-01
, 1.920536E+00"
## [1] "Llh: -1.03142875682015E+03; Pars: -2.667917E-01, 4.885906E-01, 1.521816E-01
, 1.920768E+00"
## [1] "Llh: -1.03142882383958E+03; Pars: -2.697343E-01, 4.878461E-01, 1.530424E-01
, 1.920783E+00"
## [1] "Llh: -1.03142879357305E+03; Pars: -2.677184E-01, 4.881098E-01, 1.528106E-01
, 1.920622E+00"
## [1] "Llh: -1.03142872626199E+03; Pars: -2.676177E-01, 4.885827E-01, 1.524027E-01
, 1.920209E+00"
## [1] "Llh: -1.03142869521246E+03; Pars: -2.688777E-01, 4.888009E-01, 1.522172E-01
, 1.919971E+00"

```

```

## [1] "Llh: -1.03142874076823E+03; Pars: -2.727368E-01, 4.885735E-01, 1.526630E-01
, 1.920421E+00"
## [1] "Llh: -1.03142873106028E+03; Pars: -2.702888E-01, 4.885228E-01, 1.526009E-01
, 1.920392E+00"
## [1] "Llh: -1.03142870574984E+03; Pars: -2.688627E-01, 4.886249E-01, 1.519595E-01
, 1.920787E+00"
## [1] "Llh: -1.03142870511075E+03; Pars: -2.686410E-01, 4.885654E-01, 1.522060E-01
, 1.920612E+00"
## [1] "Llh: -1.03142871165608E+03; Pars: -2.695812E-01, 4.891306E-01, 1.517923E-01
, 1.920249E+00"
## [1] "Llh: -1.03142870000117E+03; Pars: -2.691155E-01, 4.888752E-01, 1.520469E-01
, 1.920343E+00"
## [1] "Llh: -1.03142869321147E+03; Pars: -2.716698E-01, 4.887915E-01, 1.523539E-01
, 1.919891E+00"
## [1] "Llh: -1.03142874019612E+03; Pars: -2.741088E-01, 4.888920E-01, 1.524400E-01
, 1.919453E+00"
## [1] "Llh: -1.03142868974546E+03; Pars: -2.688632E-01, 4.889938E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142873516441E+03; Pars: -2.681504E-01, 4.892295E-01, 1.514163E-01
, 1.919829E+00"
## [1] "Llh: -1.03142872222446E+03; Pars: -2.668632E-01, 4.889938E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142868974546E+03; Pars: -2.688632E-01, 4.889938E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142877408817E+03; Pars: -2.678632E-01, 4.894831E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142866133670E+03; Pars: -2.678632E-01, 4.885051E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142884625178E+03; Pars: -2.678632E-01, 4.889938E-01, 1.528111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142881739874E+03; Pars: -2.678632E-01, 4.889938E-01, 1.508111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142902948462E+03; Pars: -2.678632E-01, 4.889938E-01, 1.518111E-01
, 1.921938E+00"
## [1] "Llh: -1.03142887415363E+03; Pars: -2.678632E-01, 4.889938E-01, 1.518111E-01
, 1.918098E+00"
## [1] "Llh: -1.03142868974546E+03; Pars: -2.688632E-01, 4.889938E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142867148214E+03; Pars: -2.708632E-01, 4.889938E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142874811196E+03; Pars: -2.698632E-01, 4.894831E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142863657606E+03; Pars: -2.698632E-01, 4.885051E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142882199813E+03; Pars: -2.698632E-01, 4.889938E-01, 1.528111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142879092616E+03; Pars: -2.698632E-01, 4.889938E-01, 1.508111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142898705369E+03; Pars: -2.698632E-01, 4.889938E-01, 1.518111E-01
, 1.921938E+00"

```

```

## [1] "Llh: -1.03142886584294E+03; Pars: -2.698632E-01, 4.889938E-01, 1.518111E-01
, 1.918098E+00"
## [1] "Llh: -1.03142877408817E+03; Pars: -2.678632E-01, 4.894831E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142874811196E+03; Pars: -2.698632E-01, 4.894831E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142885586825E+03; Pars: -2.688632E-01, 4.899728E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142868974546E+03; Pars: -2.688632E-01, 4.889938E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142890561576E+03; Pars: -2.688632E-01, 4.894831E-01, 1.528111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142886818162E+03; Pars: -2.688632E-01, 4.894831E-01, 1.508111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142914786944E+03; Pars: -2.688632E-01, 4.894831E-01, 1.518111E-01
, 1.921938E+00"
## [1] "Llh: -1.03142886606936E+03; Pars: -2.688632E-01, 4.894831E-01, 1.518111E-01
, 1.918098E+00"
## [1] "Llh: -1.03142866133670E+03; Pars: -2.678632E-01, 4.885051E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142863657606E+03; Pars: -2.698632E-01, 4.885051E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142868974546E+03; Pars: -2.688632E-01, 4.889938E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142863166926E+03; Pars: -2.688632E-01, 4.880168E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142878608672E+03; Pars: -2.688632E-01, 4.885051E-01, 1.528111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142876360627E+03; Pars: -2.688632E-01, 4.885051E-01, 1.508111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142889203347E+03; Pars: -2.688632E-01, 4.885051E-01, 1.518111E-01
, 1.921938E+00"
## [1] "Llh: -1.03142889747798E+03; Pars: -2.688632E-01, 4.885051E-01, 1.518111E-01
, 1.918098E+00"
## [1] "Llh: -1.03142884625178E+03; Pars: -2.678632E-01, 4.889938E-01, 1.528111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142882199813E+03; Pars: -2.698632E-01, 4.889938E-01, 1.528111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142890561576E+03; Pars: -2.688632E-01, 4.894831E-01, 1.528111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142878608672E+03; Pars: -2.688632E-01, 4.885051E-01, 1.528111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142923019679E+03; Pars: -2.688632E-01, 4.889938E-01, 1.538111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142868974546E+03; Pars: -2.688632E-01, 4.889938E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142915281949E+03; Pars: -2.688632E-01, 4.889938E-01, 1.528111E-01
, 1.921938E+00"
## [1] "Llh: -1.03142900709087E+03; Pars: -2.688632E-01, 4.889938E-01, 1.528111E-01
, 1.918098E+00"

```

```

## [1] "Llh: -1.03142881739874E+03; Pars: -2.678632E-01, 4.889938E-01, 1.508111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142879092616E+03; Pars: -2.698632E-01, 4.889938E-01, 1.508111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142886818162E+03; Pars: -2.688632E-01, 4.894831E-01, 1.508111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142876360627E+03; Pars: -2.688632E-01, 4.885051E-01, 1.508111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142868974546E+03; Pars: -2.688632E-01, 4.889938E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142917026440E+03; Pars: -2.688632E-01, 4.889938E-01, 1.498111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142911507606E+03; Pars: -2.688632E-01, 4.889938E-01, 1.508111E-01
, 1.921938E+00"
## [1] "Llh: -1.03142898492593E+03; Pars: -2.688632E-01, 4.889938E-01, 1.508111E-01
, 1.918098E+00"
## [1] "Llh: -1.03142902948462E+03; Pars: -2.678632E-01, 4.889938E-01, 1.518111E-01
, 1.921938E+00"
## [1] "Llh: -1.03142898705369E+03; Pars: -2.698632E-01, 4.889938E-01, 1.518111E-01
, 1.921938E+00"
## [1] "Llh: -1.03142914786944E+03; Pars: -2.688632E-01, 4.894831E-01, 1.518111E-01
, 1.921938E+00"
## [1] "Llh: -1.03142889203347E+03; Pars: -2.688632E-01, 4.885051E-01, 1.518111E-01
, 1.921938E+00"
## [1] "Llh: -1.03142915281949E+03; Pars: -2.688632E-01, 4.889938E-01, 1.528111E-01
, 1.921938E+00"
## [1] "Llh: -1.03142911507606E+03; Pars: -2.688632E-01, 4.889938E-01, 1.508111E-01
, 1.921938E+00"
## [1] "Llh: -1.03142981807239E+03; Pars: -2.688632E-01, 4.889938E-01, 1.518111E-01
, 1.923861E+00"
## [1] "Llh: -1.03142868974546E+03; Pars: -2.688632E-01, 4.889938E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142887415363E+03; Pars: -2.678632E-01, 4.889938E-01, 1.518111E-01
, 1.918098E+00"
## [1] "Llh: -1.03142886584294E+03; Pars: -2.698632E-01, 4.889938E-01, 1.518111E-01
, 1.918098E+00"
## [1] "Llh: -1.03142886606936E+03; Pars: -2.688632E-01, 4.894831E-01, 1.518111E-01
, 1.918098E+00"
## [1] "Llh: -1.03142889747798E+03; Pars: -2.688632E-01, 4.885051E-01, 1.518111E-01
, 1.918098E+00"
## [1] "Llh: -1.03142900709087E+03; Pars: -2.688632E-01, 4.889938E-01, 1.528111E-01
, 1.918098E+00"
## [1] "Llh: -1.03142898492593E+03; Pars: -2.688632E-01, 4.889938E-01, 1.508111E-01
, 1.918098E+00"
## [1] "Llh: -1.03142868974546E+03; Pars: -2.688632E-01, 4.889938E-01, 1.518111E-01
, 1.920017E+00"
## [1] "Llh: -1.03142954230893E+03; Pars: -2.688632E-01, 4.889938E-01, 1.518111E-01
, 1.916181E+00"
## Currently fitting: symmetric hyp
## [1] "Llh: -1.06810785299651E+03; Pars: 5.000000E-01, 1.733995E-01, 1.320976E+00

```

```
"  
## [1] "Llh: -1.06815594184238E+03; Pars: 5.358867E-01, 1.733995E-01, 1.320976E+00  
"  
## [1] "Llh: -1.06947302405545E+03; Pars: 5.000000E-01, 2.427142E-01, 1.320976E+00  
"  
## [1] "Llh: -1.05476844744736E+03; Pars: 5.000000E-01, 1.733995E-01, 1.415787E+00  
"  
## [1] "Llh: -1.05899863545933E+03; Pars: 5.236471E-01, 1.040848E-01, 1.383451E+00  
"  
## [1] "Llh: -1.06088823322398E+03; Pars: 5.176325E-01, 1.387421E-01, 1.367560E+00  
"  
## [1] "Llh: -1.05346101285454E+03; Pars: 4.811119E-01, 1.271897E-01, 1.426733E+00  
"  
## [1] "Llh: -1.04805152348620E+03; Pars: 4.558612E-01, 1.040848E-01, 1.482746E+00  
"  
## [1] "Llh: -1.04384811516861E+03; Pars: 4.848316E-01, 8.097988E-02, 1.540957E+00  
"  
## [1] "Llh: -1.03876855249938E+03; Pars: 4.774208E-01, 3.477007E-02, 1.664326E+00  
"  
## [1] "Llh: -1.03734321530522E+03; Pars: 4.352753E-01, 1.040848E-01, 1.664326E+00  
"  
## [1] "Llh: -1.03478666177757E+03; Pars: 3.968503E-01, 1.040848E-01, 1.825474E+00  
"  
## [1] "Llh: -1.03807717603791E+03; Pars: 3.907843E-01, -1.143974E-02, 1.926589E+00  
"  
## [1] "Llh: -1.03624183488241E+03; Pars: 4.156189E-01, 3.477007E-02, 1.783780E+00  
"  
## [1] "Llh: -1.04122997132305E+03; Pars: 4.030104E-01, 1.166516E-02, 2.080831E+00  
"  
## [1] "Llh: -1.03666864458658E+03; Pars: 4.156189E-01, 3.477007E-02, 1.911808E+00  
"  
## [1] "Llh: -1.03795209234699E+03; Pars: 3.508409E-01, 8.097988E-02, 2.033305E+00  
"  
## [1] "Llh: -1.03609021089615E+03; Pars: 3.789291E-01, 6.942743E-02, 1.934022E+00  
"  
## [1] "Llh: -1.03488596800768E+03; Pars: 3.789291E-01, 1.040848E-01, 1.783780E+00  
"  
## [1] "Llh: -1.03496835800099E+03; Pars: 3.877862E-01, 8.675611E-02, 1.814960E+00  
"  
## [1] "Llh: -1.03499871748637E+03; Pars: 3.562868E-01, 1.502946E-01, 1.911808E+00  
"  
## [1] "Llh: -1.03478107490008E+03; Pars: 3.702744E-01, 1.214135E-01, 1.878964E+00  
"  
## [1] "Llh: -1.03537501816448E+03; Pars: 3.848111E-01, 1.502946E-01, 1.729666E+00  
"  
## [1] "Llh: -1.03475434608685E+03; Pars: 3.833321E-01, 1.300778E-01, 1.778636E+00  
"  
## [1] "Llh: -1.03475166163458E+03; Pars: 3.877862E-01, 1.329659E-01, 1.871743E+00  
"  
## [1] "Llh: -1.03526942407474E+03; Pars: 3.922920E-01, 1.474065E-01, 1.917338E+00
```

```
"  
## [1] "Llh: -1.03455376541689E+03; Pars: 3.646147E-01, 1.522200E-01, 1.859768E+00  
"  
## [1] "Llh: -1.03469854836512E+03; Pars: 3.494925E-01, 1.762876E-01, 1.877156E+00  
"  
## [1] "Llh: -1.03462815583239E+03; Pars: 3.867919E-01, 1.554290E-01, 1.794497E+00  
"  
## [1] "Llh: -1.03453287502108E+03; Pars: 3.825947E-01, 1.469251E-01, 1.815251E+00  
"  
## [1] "Llh: -1.03523649657029E+03; Pars: 3.731371E-01, 1.579962E-01, 1.921649E+00  
"  
## [1] "Llh: -1.03454198391569E+03; Pars: 3.807575E-01, 1.370574E-01, 1.813359E+00  
"  
## [1] "Llh: -1.03461255816861E+03; Pars: 3.643807E-01, 1.578358E-01, 1.787887E+00  
"  
## [1] "Llh: -1.03451181945770E+03; Pars: 3.700962E-01, 1.516183E-01, 1.808492E+00  
"  
## [1] "Llh: -1.03486989052086E+03; Pars: 3.914118E-01, 1.381806E-01, 1.766170E+00  
"  
## [1] "Llh: -1.03449211143002E+03; Pars: 3.711368E-01, 1.487101E-01, 1.835914E+00  
"  
## [1] "Llh: -1.03449730450708E+03; Pars: 3.684766E-01, 1.611117E-01, 1.826361E+00  
"  
## [1] "Llh: -1.03449362650617E+03; Pars: 3.715092E-01, 1.550981E-01, 1.823102E+00  
"  
## [1] "Llh: -1.03445718927876E+03; Pars: 3.595891E-01, 1.566926E-01, 1.829714E+00  
"  
## [1] "Llh: -1.03444196123879E+03; Pars: 3.486104E-01, 1.615763E-01, 1.836988E+00  
"  
## [1] "Llh: -1.03451749749778E+03; Pars: 3.572027E-01, 1.586380E-01, 1.855794E+00  
"  
## [1] "Llh: -1.03447836044428E+03; Pars: 3.668298E-01, 1.533732E-01, 1.820203E+00  
"  
## [1] "Llh: -1.03444055275318E+03; Pars: 3.528497E-01, 1.540084E-01, 1.838970E+00  
"  
## [1] "Llh: -1.03443019808549E+03; Pars: 3.438744E-01, 1.534635E-01, 1.846957E+00  
"  
## [1] "Llh: -1.03440973717059E+03; Pars: 3.356880E-01, 1.635652E-01, 1.833452E+00  
"  
## [1] "Llh: -1.03440418585220E+03; Pars: 3.192543E-01, 1.709927E-01, 1.832223E+00  
"  
## [1] "Llh: -1.03442668541074E+03; Pars: 3.095898E-01, 1.706484E-01, 1.857410E+00  
"  
## [1] "Llh: -1.03440977405916E+03; Pars: 3.230027E-01, 1.663296E-01, 1.848037E+00  
"  
## [1] "Llh: -1.03437622244777E+03; Pars: 3.096146E-01, 1.656143E-01, 1.847811E+00  
"  
## [1] "Llh: -1.03436574025486E+03; Pars: 2.917844E-01, 1.676333E-01, 1.853246E+00  
"  
## [1] "Llh: -1.03442591497418E+03; Pars: 2.813218E-01, 1.831736E-01, 1.842008E+00
```

```
"  
## [1] "Llh: -1.03439431537323E+03; Pars: 2.958029E-01, 1.757461E-01, 1.843244E+00  
"  
## [1] "Llh: -1.03438064549413E+03; Pars: 2.824412E-01, 1.765851E-01, 1.837746E+00  
"  
## [1] "Llh: -1.03437663421791E+03; Pars: 2.920771E-01, 1.740212E-01, 1.840313E+00  
"  
## [1] "Llh: -1.03438555323292E+03; Pars: 2.693010E-01, 1.739410E-01, 1.859060E+00  
"  
## [1] "Llh: -1.03437545049801E+03; Pars: 2.810041E-01, 1.732040E-01, 1.852314E+00  
"  
## [1] "Llh: -1.03435260054830E+03; Pars: 2.808745E-01, 1.674929E-01, 1.854002E+00  
"  
## [1] "Llh: -1.03434607976771E+03; Pars: 2.736953E-01, 1.633663E-01, 1.859405E+00  
"  
## [1] "Llh: -1.03438280980199E+03; Pars: 2.723937E-01, 1.621145E-01, 1.869775E+00  
"  
## [1] "Llh: -1.03436253830656E+03; Pars: 2.870268E-01, 1.710446E-01, 1.847635E+00  
"  
## [1] "Llh: -1.03434150127743E+03; Pars: 2.871586E-01, 1.614922E-01, 1.854531E+00  
"  
## [1] "Llh: -1.03433690821338E+03; Pars: 2.902862E-01, 1.556363E-01, 1.855641E+00  
"  
## [1] "Llh: -1.03432458967756E+03; Pars: 2.756018E-01, 1.590648E-01, 1.855195E+00  
"  
## [1] "Llh: -1.03431480499390E+03; Pars: 2.678502E-01, 1.547805E-01, 1.856170E+00  
"  
## [1] "Llh: -1.03435044890623E+03; Pars: 2.675478E-01, 1.448109E-01, 1.866556E+00  
"  
## [1] "Llh: -1.03433288199684E+03; Pars: 2.722900E-01, 1.513693E-01, 1.861807E+00  
"  
## [1] "Llh: -1.03432484432957E+03; Pars: 2.796186E-01, 1.444911E-01, 1.856338E+00  
"  
## [1] "Llh: -1.03432258204614E+03; Pars: 2.781259E-01, 1.492099E-01, 1.857104E+00  
"  
## [1] "Llh: -1.03432308868203E+03; Pars: 2.562223E-01, 1.479369E-01, 1.861081E+00  
"  
## [1] "Llh: -1.03432064331611E+03; Pars: 2.643439E-01, 1.498617E-01, 1.859720E+00  
"  
## [1] "Llh: -1.03430628365213E+03; Pars: 2.678162E-01, 1.511988E-01, 1.853530E+00  
"  
## [1] "Llh: -1.03429808502167E+03; Pars: 2.656070E-01, 1.511136E-01, 1.849405E+00  
"  
## [1] "Llh: -1.03430469128608E+03; Pars: 2.542685E-01, 1.546273E-01, 1.853085E+00  
"  
## [1] "Llh: -1.03430585334891E+03; Pars: 2.600338E-01, 1.532730E-01, 1.854089E+00  
"  
## [1] "Llh: -1.03429872924395E+03; Pars: 2.606834E-01, 1.571526E-01, 1.846075E+00  
"  
## [1] "Llh: -1.03430005234469E+03; Pars: 2.615937E-01, 1.553299E-01, 1.849476E+00
```

```
"  
## [1] "Llh: -1.03429510695007E+03; Pars: 2.526610E-01, 1.538151E-01, 1.842892E+00  
"  
## [1] "Llh: -1.03430309527255E+03; Pars: 2.453925E-01, 1.533324E-01, 1.836289E+00  
"  
## [1] "Llh: -1.03429301226524E+03; Pars: 2.650340E-01, 1.534268E-01, 1.839186E+00  
"  
## [1] "Llh: -1.03429831338223E+03; Pars: 2.705864E-01, 1.528266E-01, 1.832275E+00  
"  
## [1] "Llh: -1.03429231898666E+03; Pars: 2.613803E-01, 1.484178E-01, 1.841573E+00  
"  
## [1] "Llh: -1.03429680599350E+03; Pars: 2.617294E-01, 1.440504E-01, 1.839327E+00  
"  
## [1] "Llh: -1.03430109330710E+03; Pars: 2.538062E-01, 1.526596E-01, 1.833064E+00  
"  
## [1] "Llh: -1.03429332005313E+03; Pars: 2.626063E-01, 1.515001E-01, 1.845306E+00  
"  
## [1] "Llh: -1.03429408542733E+03; Pars: 2.737672E-01, 1.484147E-01, 1.841148E+00  
"  
## [1] "Llh: -1.03429225949732E+03; Pars: 2.683309E-01, 1.497648E-01, 1.841584E+00  
"  
## [1] "Llh: -1.03429344268017E+03; Pars: 2.672133E-01, 1.495729E-01, 1.836266E+00  
"  
## [1] "Llh: -1.03429211835539E+03; Pars: 2.637506E-01, 1.510183E-01, 1.843042E+00  
"  
## [1] "Llh: -1.03429517365735E+03; Pars: 2.639103E-01, 1.460404E-01, 1.844952E+00  
"  
## [1] "Llh: -1.03429189812037E+03; Pars: 2.647526E-01, 1.515802E-01, 1.840625E+00  
"  
## [1] "Llh: -1.03429371887526E+03; Pars: 2.698962E-01, 1.531577E-01, 1.841927E+00  
"  
## [1] "Llh: -1.03429182467680E+03; Pars: 2.634837E-01, 1.496028E-01, 1.841662E+00  
"  
## [1] "Llh: -1.03429219206676E+03; Pars: 2.597293E-01, 1.517027E-01, 1.841968E+00  
"  
## [1] "Llh: -1.03429188154037E+03; Pars: 2.618535E-01, 1.512182E-01, 1.841872E+00  
"  
## [1] "Llh: -1.03429186836138E+03; Pars: 2.629712E-01, 1.505825E-01, 1.839732E+00  
"  
## [1] "Llh: -1.03429174331972E+03; Pars: 2.631658E-01, 1.506915E-01, 1.840559E+00  
"  
## [1] "Llh: -1.03429204867293E+03; Pars: 2.609281E-01, 1.494281E-01, 1.842104E+00  
"  
## [1] "Llh: -1.03429175731366E+03; Pars: 2.637913E-01, 1.510422E-01, 1.840995E+00  
"  
## [1] "Llh: -1.03429181489275E+03; Pars: 2.651169E-01, 1.496727E-01, 1.840272E+00  
"  
## [1] "Llh: -1.03429173011398E+03; Pars: 2.642972E-01, 1.500591E-01, 1.840672E+00  
"  
## [1] "Llh: -1.03429196927625E+03; Pars: 2.640186E-01, 1.515924E-01, 1.839822E+00
```

```
"  
## [1] "Llh: -1.03429172651618E+03; Pars: 2.636173E-01, 1.501002E-01, 1.841202E+00  
"  
## [1] "Llh: -1.03429180960054E+03; Pars: 2.635949E-01, 1.495250E-01, 1.840627E+00  
"  
## [1] "Llh: -1.03429171814916E+03; Pars: 2.637422E-01, 1.506629E-01, 1.840903E+00  
"  
## [1] "Llh: -1.03429177083532E+03; Pars: 2.646070E-01, 1.498566E-01, 1.841292E+00  
"  
## [1] "Llh: -1.03429171659667E+03; Pars: 2.635254E-01, 1.504828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429171454567E+03; Pars: 2.640530E-01, 1.504828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429171659667E+03; Pars: 2.635254E-01, 1.504828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429184588673E+03; Pars: 2.637890E-01, 1.514828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429180958338E+03; Pars: 2.637890E-01, 1.494828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429193503661E+03; Pars: 2.637890E-01, 1.504828E-01, 1.842584E+00  
"  
## [1] "Llh: -1.03429205138512E+03; Pars: 2.637890E-01, 1.504828E-01, 1.838903E+00  
"  
## [1] "Llh: -1.03429171659667E+03; Pars: 2.635254E-01, 1.504828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429173021369E+03; Pars: 2.629989E-01, 1.504828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429184890760E+03; Pars: 2.632620E-01, 1.514828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429182223178E+03; Pars: 2.632620E-01, 1.494828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429192042861E+03; Pars: 2.632620E-01, 1.504828E-01, 1.842584E+00  
"  
## [1] "Llh: -1.03429208161393E+03; Pars: 2.632620E-01, 1.504828E-01, 1.838903E+00  
"  
## [1] "Llh: -1.03429184588673E+03; Pars: 2.637890E-01, 1.514828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429184890760E+03; Pars: 2.632620E-01, 1.514828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429220259122E+03; Pars: 2.635254E-01, 1.524828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429171659667E+03; Pars: 2.635254E-01, 1.504828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429205800668E+03; Pars: 2.635254E-01, 1.514828E-01, 1.842584E+00  
"  
## [1] "Llh: -1.03429219203831E+03; Pars: 2.635254E-01, 1.514828E-01, 1.838903E+00  
"  
## [1] "Llh: -1.03429180958338E+03; Pars: 2.637890E-01, 1.494828E-01, 1.840742E+00  
"  
## [1] "Llh: -1.03429182223178E+03; Pars: 2.632620E-01, 1.494828E-01, 1.840742E+00
```

```

"
## [1] "Llh: -1.03429171659667E+03; Pars: 2.635254E-01, 1.504828E-01, 1.840742E+00
"
## [1] "Llh: -1.03429213948208E+03; Pars: 2.635254E-01, 1.484828E-01, 1.840742E+00
"
## [1] "Llh: -1.03429202154501E+03; Pars: 2.635254E-01, 1.494828E-01, 1.842584E+00
"
## [1] "Llh: -1.03429216553123E+03; Pars: 2.635254E-01, 1.494828E-01, 1.838903E+00
"
## [1] "Llh: -1.03429193503661E+03; Pars: 2.637890E-01, 1.504828E-01, 1.842584E+00
"
## [1] "Llh: -1.03429192042861E+03; Pars: 2.632620E-01, 1.504828E-01, 1.842584E+00
"
## [1] "Llh: -1.03429205800668E+03; Pars: 2.635254E-01, 1.514828E-01, 1.842584E+00
"
## [1] "Llh: -1.03429202154501E+03; Pars: 2.635254E-01, 1.494828E-01, 1.842584E+00
"
## [1] "Llh: -1.03429269356335E+03; Pars: 2.635254E-01, 1.504828E-01, 1.844428E+00
"
## [1] "Llh: -1.03429171659667E+03; Pars: 2.635254E-01, 1.504828E-01, 1.840742E+00
"
## [1] "Llh: -1.03429205138512E+03; Pars: 2.637890E-01, 1.504828E-01, 1.838903E+00
"
## [1] "Llh: -1.03429208161393E+03; Pars: 2.632620E-01, 1.504828E-01, 1.838903E+00
"
## [1] "Llh: -1.03429219203831E+03; Pars: 2.635254E-01, 1.514828E-01, 1.838903E+00
"
## [1] "Llh: -1.03429216553123E+03; Pars: 2.635254E-01, 1.494828E-01, 1.838903E+00
"
## [1] "Llh: -1.03429171659667E+03; Pars: 2.635254E-01, 1.504828E-01, 1.840742E+00
"
## [1] "Llh: -1.03429297221961E+03; Pars: 2.635254E-01, 1.504828E-01, 1.837065E+00
"
## Currently fitting: symmetric NIG
## [1] "Llh: -1.06888497408102E+03; Pars: 5.000000E-01, 1.733995E-01, 1.320976E+00
"
## [1] "Llh: -1.06768822691142E+03; Pars: 5.358867E-01, 1.733995E-01, 1.320976E+00
"
## [1] "Llh: -1.07022077669511E+03; Pars: 5.000000E-01, 2.427142E-01, 1.320976E+00
"
## [1] "Llh: -1.05590421380019E+03; Pars: 5.000000E-01, 1.733995E-01, 1.415787E+00
"
## [1] "Llh: -1.05954506344457E+03; Pars: 5.236471E-01, 1.040848E-01, 1.383451E+00
"
## [1] "Llh: -1.06142762209235E+03; Pars: 5.176325E-01, 1.387421E-01, 1.367560E+00
"
## [1] "Llh: -1.05357096222257E+03; Pars: 5.400299E-01, 1.271897E-01, 1.426733E+00
"
## [1] "Llh: -1.04774647710281E+03; Pars: 5.612310E-01, 1.040848E-01, 1.482746E+00
"

```

```
## [1] "Llh: -1.04426813846586E+03; Pars: 5.196296E-01, 8.097988E-02, 1.540957E+00"
##
## [1] "Llh: -1.03845535511418E+03; Pars: 5.116869E-01, 3.477007E-02, 1.664326E+00"
##
## [1] "Llh: -1.03658304257748E+03; Pars: 5.236471E-01, 1.040848E-01, 1.664326E+00"
##
## [1] "Llh: -1.03231193330350E+03; Pars: 5.236471E-01, 1.040848E-01, 1.825474E+00"
##
## [1] "Llh: -1.03498589496594E+03; Pars: 5.655701E-01, -1.143974E-02, 1.926589E+00"
##
## [1] "Llh: -1.03433842111291E+03; Pars: 5.484125E-01, 3.477007E-02, 1.783780E+00"
##
## [1] "Llh: -1.03535536565947E+03; Pars: 4.961640E-01, 1.166516E-02, 2.080831E+00"
##
## [1] "Llh: -1.03324145993082E+03; Pars: 5.116869E-01, 3.477007E-02, 1.911808E+00"
##
## [1] "Llh: -1.03347198252337E+03; Pars: 5.442050E-01, 8.097988E-02, 2.033305E+00"
##
## [1] "Llh: -1.03250987830741E+03; Pars: 5.358867E-01, 6.942743E-02, 1.934022E+00"
##
## [1] "Llh: -1.03227900281893E+03; Pars: 5.000000E-01, 1.040848E-01, 2.002225E+00"
##
## [1] "Llh: -1.03373145328861E+03; Pars: 4.774208E-01, 1.387421E-01, 2.121284E+00"
##
## [1] "Llh: -1.03164812919947E+03; Pars: 5.276956E-01, 1.502946E-01, 1.926589E+00"
##
## [1] "Llh: -1.03214745927197E+03; Pars: 5.358867E-01, 2.080569E-01, 1.934022E+00"
##
## [1] "Llh: -1.03159769528982E+03; Pars: 4.987180E-01, 1.695487E-01, 1.899577E+00"
##
## [1] "Llh: -1.03225410023667E+03; Pars: 4.811119E-01, 2.196093E-01, 1.882586E+00"
##
## [1] "Llh: -1.03298647191183E+03; Pars: 4.940456E-01, 1.785339E-01, 2.066635E+00"
##
## [1] "Llh: -1.03170602046510E+03; Pars: 5.160844E-01, 1.226971E-01, 1.882988E+00"
##
## [1] "Llh: -1.03243987262811E+03; Pars: 5.284487E-01, 1.909421E-01, 1.808629E+00"
##
## [1] "Llh: -1.03173298652429E+03; Pars: 5.069653E-01, 1.257991E-01, 1.951965E+00"
##
## [1] "Llh: -1.03179647891810E+03; Pars: 5.211883E-01, 1.692278E-01, 1.855198E+00"
##
## [1] "Llh: -1.03160131477768E+03; Pars: 5.104842E-01, 1.366563E-01, 1.927310E+00"
##
## [1] "Llh: -1.03179769489941E+03; Pars: 5.082684E-01, 1.816360E-01, 1.953218E+00"
##
## [1] "Llh: -1.03158901632739E+03; Pars: 5.141192E-01, 1.374318E-01, 1.900306E+00"
##
## [1] "Llh: -1.03158755378921E+03; Pars: 4.885219E-01, 1.454632E-01, 1.891613E+00"
```

```
## [1] "Llh: -1.03175878254774E+03; Pars: 4.700395E-01, 1.430476E-01, 1.874364E+00"
##
## [1] "Llh: -1.03174413464251E+03; Pars: 4.904029E-01, 1.649729E-01, 1.867484E+00"
##
## [1] "Llh: -1.03155169207573E+03; Pars: 5.053881E-01, 1.437354E-01, 1.912176E+00"
##
## [1] "Llh: -1.03171443275368E+03; Pars: 5.064387E-01, 1.148716E-01, 1.903117E+00"
##
## [1] "Llh: -1.03155485977349E+03; Pars: 5.006371E-01, 1.558794E-01, 1.900462E+00"
##
## [1] "Llh: -1.03156027570651E+03; Pars: 4.826410E-01, 1.592869E-01, 1.902492E+00"
##
## [1] "Llh: -1.03154822764260E+03; Pars: 4.903251E-01, 1.538232E-01, 1.901945E+00"
##
## [1] "Llh: -1.03156352549393E+03; Pars: 5.091792E-01, 1.568288E-01, 1.918187E+00"
##
## [1] "Llh: -1.03154493393087E+03; Pars: 5.039344E-01, 1.539874E-01, 1.911509E+00"
##
## [1] "Llh: -1.03153886552893E+03; Pars: 4.990366E-01, 1.451512E-01, 1.916648E+00"
##
## [1] "Llh: -1.03155364206056E+03; Pars: 4.982383E-01, 1.397871E-01, 1.924793E+00"
##
## [1] "Llh: -1.03154136223839E+03; Pars: 4.901948E-01, 1.582391E-01, 1.907875E+00"
##
## [1] "Llh: -1.03153582737100E+03; Pars: 4.939498E-01, 1.546132E-01, 1.908949E+00"
##
## [1] "Llh: -1.03156087090398E+03; Pars: 5.077408E-01, 1.486780E-01, 1.922844E+00"
##
## [1] "Llh: -1.03153720243961E+03; Pars: 4.946222E-01, 1.525369E-01, 1.907149E+00"
##
## [1] "Llh: -1.03153190701490E+03; Pars: 4.879236E-01, 1.475468E-01, 1.910313E+00"
##
## [1] "Llh: -1.03154121707449E+03; Pars: 4.801099E-01, 1.443265E-01, 1.909715E+00"
##
## [1] "Llh: -1.03155944467829E+03; Pars: 4.853701E-01, 1.579800E-01, 1.900990E+00"
##
## [1] "Llh: -1.03153226863832E+03; Pars: 4.955843E-01, 1.483584E-01, 1.912722E+00"
##
## [1] "Llh: -1.03152756389152E+03; Pars: 4.903368E-01, 1.478087E-01, 1.914179E+00"
##
## [1] "Llh: -1.03152642531602E+03; Pars: 4.882081E-01, 1.454446E-01, 1.917704E+00"
##
## [1] "Llh: -1.03153805105625E+03; Pars: 4.871920E-01, 1.396201E-01, 1.918216E+00"
##
## [1] "Llh: -1.03153029362576E+03; Pars: 4.922516E-01, 1.508649E-01, 1.911262E+00"
##
## [1] "Llh: -1.03152769737580E+03; Pars: 4.834056E-01, 1.475458E-01, 1.913459E+00"
##
## [1] "Llh: -1.03152744116362E+03; Pars: 4.864219E-01, 1.477489E-01, 1.913275E+00"
```

```
## [1] "Llh: -1.03152454491872E+03; Pars: 4.899875E-01, 1.484922E-01, 1.917851E+00"
##
## [1] "Llh: -1.03152496495883E+03; Pars: 4.910228E-01, 1.489649E-01, 1.921632E+00"
##
## [1] "Llh: -1.03152574421856E+03; Pars: 4.841891E-01, 1.435923E-01, 1.921302E+00"
##
## [1] "Llh: -1.03152483333502E+03; Pars: 4.861922E-01, 1.454104E-01, 1.918787E+00"
##
## [1] "Llh: -1.03152749620809E+03; Pars: 4.898377E-01, 1.451492E-01, 1.922966E+00"
##
## [1] "Llh: -1.03152552059819E+03; Pars: 4.872736E-01, 1.470990E-01, 1.915693E+00"
##
## [1] "Llh: -1.03152323973837E+03; Pars: 4.874226E-01, 1.485564E-01, 1.917182E+00"
##
## [1] "Llh: -1.03152261969296E+03; Pars: 4.870303E-01, 1.501124E-01, 1.916921E+00"
##
## [1] "Llh: -1.03152221373772E+03; Pars: 4.881948E-01, 1.489110E-01, 1.920016E+00"
##
## [1] "Llh: -1.03152211859868E+03; Pars: 4.886560E-01, 1.498170E-01, 1.922181E+00"
##
## [1] "Llh: -1.03152531647754E+03; Pars: 4.909322E-01, 1.535372E-01, 1.919179E+00"
##
## [1] "Llh: -1.03152306230311E+03; Pars: 4.873729E-01, 1.474421E-01, 1.918885E+00"
##
## [1] "Llh: -1.03151977279370E+03; Pars: 4.853951E-01, 1.497555E-01, 1.920806E+00"
##
## [1] "Llh: -1.03151800180920E+03; Pars: 4.831151E-01, 1.503871E-01, 1.922285E+00"
##
## [1] "Llh: -1.03151953214302E+03; Pars: 4.851528E-01, 1.527688E-01, 1.922038E+00"
##
## [1] "Llh: -1.03151967368327E+03; Pars: 4.857068E-01, 1.514371E-01, 1.921249E+00"
##
## [1] "Llh: -1.03151913898970E+03; Pars: 4.842454E-01, 1.518695E-01, 1.927429E+00"
##
## [1] "Llh: -1.03151890272025E+03; Pars: 4.849402E-01, 1.514303E-01, 1.924797E+00"
##
## [1] "Llh: -1.03151702295949E+03; Pars: 4.801846E-01, 1.532405E-01, 1.923898E+00"
##
## [1] "Llh: -1.03151769051264E+03; Pars: 4.760042E-01, 1.549523E-01, 1.924757E+00"
##
## [1] "Llh: -1.03151613640953E+03; Pars: 4.803445E-01, 1.506031E-01, 1.925283E+00"
##
## [1] "Llh: -1.03151547929518E+03; Pars: 4.779583E-01, 1.495202E-01, 1.926908E+00"
##
## [1] "Llh: -1.03151644894143E+03; Pars: 4.759315E-01, 1.506683E-01, 1.923929E+00"
##
## [1] "Llh: -1.03151605428753E+03; Pars: 4.781678E-01, 1.508588E-01, 1.924146E+00"
##
## [1] "Llh: -1.03151484810214E+03; Pars: 4.744624E-01, 1.520259E-01, 1.927685E+00"
```

```
## [1] "Llh: -1.03151524988981E+03; Pars: 4.701944E-01, 1.528453E-01, 1.930391E+00"
##
## [1] "Llh: -1.03151564186718E+03; Pars: 4.735580E-01, 1.483627E-01, 1.928596E+00"
##
## [1] "Llh: -1.03151511286401E+03; Pars: 4.752061E-01, 1.495822E-01, 1.927420E+00"
##
## [1] "Llh: -1.03151453839511E+03; Pars: 4.735896E-01, 1.498934E-01, 1.930535E+00"
##
## [1] "Llh: -1.03151501198547E+03; Pars: 4.713170E-01, 1.494107E-01, 1.933738E+00"
##
## [1] "Llh: -1.03151476115938E+03; Pars: 4.709057E-01, 1.514808E-01, 1.930187E+00"
##
## [1] "Llh: -1.03151454851507E+03; Pars: 4.726591E-01, 1.509906E-01, 1.929366E+00"
##
## [1] "Llh: -1.03151453878685E+03; Pars: 4.719392E-01, 1.523578E-01, 1.930972E+00"
##
## [1] "Llh: -1.03151441302674E+03; Pars: 4.727538E-01, 1.516639E-01, 1.930083E+00"
##
## [1] "Llh: -1.03151470391093E+03; Pars: 4.715433E-01, 1.496727E-01, 1.932307E+00"
##
## [1] "Llh: -1.03151445414140E+03; Pars: 4.722714E-01, 1.502610E-01, 1.931151E+00"
##
## [1] "Llh: -1.03151448129550E+03; Pars: 4.730836E-01, 1.502216E-01, 1.931814E+00"
##
## [1] "Llh: -1.03151439282322E+03; Pars: 4.729775E-01, 1.504138E-01, 1.931202E+00"
##
## [1] "Llh: -1.03151441695008E+03; Pars: 4.717471E-01, 1.516657E-01, 1.931089E+00"
##
## [1] "Llh: -1.03151435100985E+03; Pars: 4.722071E-01, 1.512227E-01, 1.930950E+00"
##
## [1] "Llh: -1.03151440483085E+03; Pars: 4.730209E-01, 1.519392E-01, 1.930339E+00"
##
## [1] "Llh: -1.03151434360404E+03; Pars: 4.728334E-01, 1.515197E-01, 1.930542E+00"
##
## [1] "Llh: -1.03151440578384E+03; Pars: 4.725913E-01, 1.504402E-01, 1.931713E+00"
##
## [1] "Llh: -1.03151434325235E+03; Pars: 4.726319E-01, 1.507461E-01, 1.931305E+00"
##
## [1] "Llh: -1.03151444408835E+03; Pars: 4.721377E-01, 1.519118E-01, 1.930664E+00"
##
## [1] "Llh: -1.03151433560316E+03; Pars: 4.727674E-01, 1.507883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151436325338E+03; Pars: 4.737138E-01, 1.507883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151433560316E+03; Pars: 4.727674E-01, 1.507883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151435829226E+03; Pars: 4.732404E-01, 1.517883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151457003564E+03; Pars: 4.732404E-01, 1.497883E-01, 1.931067E+00"
```

```
## [1] "Llh: -1.03151463527366E+03; Pars: 4.732404E-01, 1.507883E-01, 1.932999E+00"
##
## [1] "Llh: -1.03151453040715E+03; Pars: 4.732404E-01, 1.507883E-01, 1.929137E+00"
##
## [1] "Llh: -1.03151433560316E+03; Pars: 4.727674E-01, 1.507883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151441265303E+03; Pars: 4.718228E-01, 1.507883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151437582802E+03; Pars: 4.722948E-01, 1.517883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151460200395E+03; Pars: 4.722948E-01, 1.497883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151450798550E+03; Pars: 4.722948E-01, 1.507883E-01, 1.932999E+00"
##
## [1] "Llh: -1.03151470689292E+03; Pars: 4.722948E-01, 1.507883E-01, 1.929137E+00"
##
## [1] "Llh: -1.03151435829226E+03; Pars: 4.732404E-01, 1.517883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151437582802E+03; Pars: 4.722948E-01, 1.517883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151462804920E+03; Pars: 4.727674E-01, 1.527883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151433560316E+03; Pars: 4.727674E-01, 1.507883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151458150642E+03; Pars: 4.727674E-01, 1.517883E-01, 1.932999E+00"
##
## [1] "Llh: -1.03151461933222E+03; Pars: 4.727674E-01, 1.517883E-01, 1.929137E+00"
##
## [1] "Llh: -1.03151457003564E+03; Pars: 4.732404E-01, 1.497883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151460200395E+03; Pars: 4.722948E-01, 1.497883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151433560316E+03; Pars: 4.727674E-01, 1.507883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151506595129E+03; Pars: 4.727674E-01, 1.487883E-01, 1.931067E+00"
##
## [1] "Llh: -1.03151479103285E+03; Pars: 4.727674E-01, 1.497883E-01, 1.932999E+00"
##
## [1] "Llh: -1.03151484773503E+03; Pars: 4.727674E-01, 1.497883E-01, 1.929137E+00"
##
## [1] "Llh: -1.03151463527366E+03; Pars: 4.732404E-01, 1.507883E-01, 1.932999E+00"
##
## [1] "Llh: -1.03151450798550E+03; Pars: 4.722948E-01, 1.507883E-01, 1.932999E+00"
##
## [1] "Llh: -1.03151458150642E+03; Pars: 4.727674E-01, 1.517883E-01, 1.932999E+00"
##
## [1] "Llh: -1.03151479103285E+03; Pars: 4.727674E-01, 1.497883E-01, 1.932999E+00"
##
## [1] "Llh: -1.03151527411197E+03; Pars: 4.727674E-01, 1.507883E-01, 1.934933E+00"
```

```

## [1] "Llh: -1.03151433560316E+03; Pars: 4.727674E-01, 1.507883E-01, 1.931067E+00
"
## [1] "Llh: -1.03151453040715E+03; Pars: 4.732404E-01, 1.507883E-01, 1.929137E+00
"
## [1] "Llh: -1.03151470689292E+03; Pars: 4.722948E-01, 1.507883E-01, 1.929137E+00
"
## [1] "Llh: -1.03151461933222E+03; Pars: 4.727674E-01, 1.517883E-01, 1.929137E+00
"
## [1] "Llh: -1.03151484773503E+03; Pars: 4.727674E-01, 1.497883E-01, 1.929137E+00
"
## [1] "Llh: -1.03151433560316E+03; Pars: 4.727674E-01, 1.507883E-01, 1.931067E+00
"
## [1] "Llh: -1.03151536868751E+03; Pars: 4.727674E-01, 1.507883E-01, 1.927209E+00
"
## Currently fitting: symmetric VG
## [1] "Llh: -1.07106376785753E+03; Pars: 1.000000E+00, 1.733995E-01, 1.320976E+00
"
## [1] "Llh: -1.07074278933973E+03; Pars: 1.028228E+00, 1.733995E-01, 1.320976E+00
"
## [1] "Llh: -1.07122847850364E+03; Pars: 1.000000E+00, 2.012366E-01, 1.320976E+00
"
## [1] "Llh: -1.06528138695051E+03; Pars: 1.000000E+00, 1.733995E-01, 1.358265E+00
"
## [1] "Llh: -1.06704964982291E+03; Pars: 1.018731E+00, 1.455624E-01, 1.345720E+00
"
## [1] "Llh: -1.06794306365034E+03; Pars: 1.014016E+00, 1.594810E-01, 1.339491E+00
"
## [1] "Llh: -1.06433300752470E+03; Pars: 1.031413E+00, 1.548414E-01, 1.362472E+00
"
## [1] "Llh: -1.06131422163060E+03; Pars: 1.047488E+00, 1.455624E-01, 1.383707E+00
"
## [1] "Llh: -1.05904587808863E+03; Pars: 1.015585E+00, 1.362834E-01, 1.405272E+00
"
## [1] "Llh: -1.05444781511841E+03; Pars: 1.009322E+00, 1.177253E-01, 1.449417E+00
"
## [1] "Llh: -1.05383108433192E+03; Pars: 1.018731E+00, 1.455624E-01, 1.449417E+00
"
## [1] "Llh: -1.04864914097189E+03; Pars: 1.018731E+00, 1.455624E-01, 1.504224E+00
"
## [1] "Llh: -1.04646654031485E+03; Pars: 1.050733E+00, 9.916725E-02, 1.537148E+00
"
## [1] "Llh: -1.04125328282584E+03; Pars: 1.077057E+00, 6.205113E-02, 1.635238E+00
"
## [1] "Llh: -1.03953274004725E+03; Pars: 1.021887E+00, 7.133016E-02, 1.686607E+00
"
## [1] "Llh: -1.03755151209929E+03; Pars: 1.009322E+00, 3.421403E-02, 1.862082E+00
"
## [1] "Llh: -1.03717501770478E+03; Pars: 1.060528E+00, 4.349307E-02, 1.902837E+00
"
## [1] "Llh: -1.04438948937934E+03; Pars: 1.087097E+00, 6.376941E-03, 2.180248E+00

```

```
"  
## [1] "Llh: -1.04483406522184E+03; Pars: 1.079280E+00, -5.239026E-02, 2.144578E+00  
"  
## [1] "Llh: -1.03892288566869E+03; Pars: 1.063814E+00, -2.902090E-03, 1.962612E+00  
"  
## [1] "Llh: -1.04601557041120E+03; Pars: 1.012449E+00, -1.218112E-02, 2.227967E+00  
"  
## [1] "Llh: -1.03783689968018E+03; Pars: 1.060528E+00, 4.349307E-02, 1.766701E+00  
"  
## [1] "Llh: -1.03796178254766E+03; Pars: 1.022941E+00, 8.370220E-02, 1.730644E+00  
"  
## [1] "Llh: -1.03730931815229E+03; Pars: 1.033010E+00, 6.205113E-02, 1.785930E+00  
"  
## [1] "Llh: -1.03746174642672E+03; Pars: 1.008282E+00, 4.967909E-02, 1.936483E+00  
"  
## [1] "Llh: -1.03716932883848E+03; Pars: 1.021097E+00, 4.813258E-02, 1.892566E+00  
"  
## [1] "Llh: -1.03650007023436E+03; Pars: 1.067659E+00, 6.823715E-02, 1.857288E+00  
"  
## [1] "Llh: -1.03610819448411E+03; Pars: 1.098080E+00, 8.524871E-02, 1.854896E+00  
"  
## [1] "Llh: -1.03790431911760E+03; Pars: 1.086537E+00, 5.586511E-02, 1.986020E+00  
"  
## [1] "Llh: -1.03681595503941E+03; Pars: 1.046139E+00, 6.050462E-02, 1.833979E+00  
"  
## [1] "Llh: -1.03636969477465E+03; Pars: 1.048749E+00, 8.576421E-02, 1.818758E+00  
"  
## [1] "Llh: -1.03645302653824E+03; Pars: 1.051681E+00, 7.519642E-02, 1.839423E+00  
"  
## [1] "Llh: -1.03617336707979E+03; Pars: 1.108825E+00, 1.062124E-01, 1.780772E+00  
"  
## [1] "Llh: -1.03619051075773E+03; Pars: 1.086211E+00, 9.169248E-02, 1.808085E+00  
"  
## [1] "Llh: -1.03571556705807E+03; Pars: 1.125096E+00, 1.243123E-01, 1.801943E+00  
"  
## [1] "Llh: -1.03565705871724E+03; Pars: 1.166782E+00, 1.562161E-01, 1.786135E+00  
"  
## [1] "Llh: -1.03569927484449E+03; Pars: 1.204998E+00, 1.460206E-01, 1.795229E+00  
"  
## [1] "Llh: -1.03567217065903E+03; Pars: 1.163879E+00, 1.309565E-01, 1.801083E+00  
"  
## [1] "Llh: -1.03550715024659E+03; Pars: 1.177131E+00, 1.420685E-01, 1.847439E+00  
"  
## [1] "Llh: -1.03577752642039E+03; Pars: 1.212846E+00, 1.599965E-01, 1.881703E+00  
"  
## [1] "Llh: -1.03626753683595E+03; Pars: 1.245032E+00, 2.009120E-01, 1.768855E+00  
"  
## [1] "Llh: -1.03568552448616E+03; Pars: 1.133107E+00, 1.141645E-01, 1.833002E+00  
"  
## [1] "Llh: -1.03573550817771E+03; Pars: 1.206546E+00, 1.719962E-01, 1.789984E+00
```

```
"  
## [1] "Llh: -1.03557215991158E+03; Pars: 1.151036E+00, 1.286224E-01, 1.822151E+00  
"  
## [1] "Llh: -1.03542104506892E+03; Pars: 1.165990E+00, 1.536481E-01, 1.835885E+00  
"  
## [1] "Llh: -1.03543687270780E+03; Pars: 1.167047E+00, 1.649940E-01, 1.853538E+00  
"  
## [1] "Llh: -1.03574403397161E+03; Pars: 1.162561E+00, 1.266766E-01, 1.885468E+00  
"  
## [1] "Llh: -1.03550415642466E+03; Pars: 1.165725E+00, 1.488312E-01, 1.810466E+00  
"  
## [1] "Llh: -1.03549519983798E+03; Pars: 1.188470E+00, 1.677428E-01, 1.840290E+00  
"  
## [1] "Llh: -1.03545344965305E+03; Pars: 1.178999E+00, 1.579627E-01, 1.835739E+00  
"  
## [1] "Llh: -1.03549429391919E+03; Pars: 1.163353E+00, 1.648929E-01, 1.807428E+00  
"  
## [1] "Llh: -1.03545420572229E+03; Pars: 1.166782E+00, 1.591868E-01, 1.817349E+00  
"  
## [1] "Llh: -1.03545596231565E+03; Pars: 1.175445E+00, 1.650339E-01, 1.849010E+00  
"  
## [1] "Llh: -1.03543445202580E+03; Pars: 1.173007E+00, 1.609832E-01, 1.839298E+00  
"  
## [1] "Llh: -1.03548570058844E+03; Pars: 1.178554E+00, 1.558759E-01, 1.856809E+00  
"  
## [1] "Llh: -1.03543482838389E+03; Pars: 1.169714E+00, 1.583591E-01, 1.827135E+00  
"  
## [1] "Llh: -1.03540214918342E+03; Pars: 1.160210E+00, 1.573643E-01, 1.832461E+00  
"  
## [1] "Llh: -1.03538288813800E+03; Pars: 1.150929E+00, 1.570651E-01, 1.830824E+00  
"  
## [1] "Llh: -1.03539107034874E+03; Pars: 1.156866E+00, 1.561052E-01, 1.843567E+00  
"  
## [1] "Llh: -1.03539796375938E+03; Pars: 1.160064E+00, 1.566687E-01, 1.839445E+00  
"  
## [1] "Llh: -1.03538026290107E+03; Pars: 1.143010E+00, 1.502291E-01, 1.834208E+00  
"  
## [1] "Llh: -1.03538988518227E+03; Pars: 1.128300E+00, 1.448520E-01, 1.831668E+00  
"  
## [1] "Llh: -1.03534574765706E+03; Pars: 1.134731E+00, 1.552847E-01, 1.836498E+00  
"  
## [1] "Llh: -1.03532062231397E+03; Pars: 1.119417E+00, 1.561030E-01, 1.836805E+00  
"  
## [1] "Llh: -1.03536273108385E+03; Pars: 1.118864E+00, 1.528262E-01, 1.824371E+00  
"  
## [1] "Llh: -1.03535466079298E+03; Pars: 1.128246E+00, 1.536460E-01, 1.829151E+00  
"  
## [1] "Llh: -1.03533775768303E+03; Pars: 1.109810E+00, 1.495870E-01, 1.835950E+00  
"  
## [1] "Llh: -1.03534038863050E+03; Pars: 1.119950E+00, 1.514565E-01, 1.834667E+00
```

```
"  
## [1] "Llh: -1.03531097229172E+03; Pars: 1.095754E+00, 1.559949E-01, 1.833723E+00  
"  
## [1] "Llh: -1.03531421362885E+03; Pars: 1.072864E+00, 1.588778E-01, 1.833481E+00  
"  
## [1] "Llh: -1.03529936274513E+03; Pars: 1.088676E+00, 1.541440E-01, 1.841855E+00  
"  
## [1] "Llh: -1.03529538226579E+03; Pars: 1.069415E+00, 1.543930E-01, 1.848240E+00  
"  
## [1] "Llh: -1.03528459714787E+03; Pars: 1.079739E+00, 1.614069E-01, 1.843214E+00  
"  
## [1] "Llh: -1.03528564603278E+03; Pars: 1.065011E+00, 1.673169E-01, 1.846857E+00  
"  
## [1] "Llh: -1.03531562541636E+03; Pars: 1.045025E+00, 1.584269E-01, 1.846640E+00  
"  
## [1] "Llh: -1.03529578762341E+03; Pars: 1.063146E+00, 1.578459E-01, 1.844176E+00  
"  
## [1] "Llh: -1.03529944822763E+03; Pars: 1.046307E+00, 1.597690E-01, 1.856767E+00  
"  
## [1] "Llh: -1.03528942411906E+03; Pars: 1.058455E+00, 1.588254E-01, 1.850979E+00  
"  
## [1] "Llh: -1.03527946546393E+03; Pars: 1.075224E+00, 1.585710E-01, 1.850779E+00  
"  
## [1] "Llh: -1.03527832120747E+03; Pars: 1.081313E+00, 1.589336E-01, 1.854090E+00  
"  
## [1] "Llh: -1.03527666796513E+03; Pars: 1.076835E+00, 1.650510E-01, 1.850605E+00  
"  
## [1] "Llh: -1.03527866014789E+03; Pars: 1.080564E+00, 1.703800E-01, 1.851788E+00  
"  
## [1] "Llh: -1.03528668408481E+03; Pars: 1.100543E+00, 1.647689E-01, 1.847617E+00  
"  
## [1] "Llh: -1.03527959009284E+03; Pars: 1.089867E+00, 1.632830E-01, 1.848457E+00  
"  
## [1] "Llh: -1.03528075586604E+03; Pars: 1.085585E+00, 1.634381E-01, 1.858917E+00  
"  
## [1] "Llh: -1.03527732519677E+03; Pars: 1.084121E+00, 1.629303E-01, 1.854979E+00  
"  
## [1] "Llh: -1.03527816907858E+03; Pars: 1.071713E+00, 1.613269E-01, 1.858002E+00  
"  
## [1] "Llh: -1.03527661956907E+03; Pars: 1.076223E+00, 1.618159E-01, 1.855611E+00  
"  
## [1] "Llh: -1.03527645660156E+03; Pars: 1.076799E+00, 1.675980E-01, 1.853371E+00  
"  
## [1] "Llh: -1.03527934188677E+03; Pars: 1.074548E+00, 1.719302E-01, 1.853012E+00  
"  
## [1] "Llh: -1.03527844369690E+03; Pars: 1.069169E+00, 1.667129E-01, 1.851412E+00  
"  
## [1] "Llh: -1.03527610489059E+03; Pars: 1.080363E+00, 1.638760E-01, 1.854087E+00  
"  
## [1] "Llh: -1.03527762940748E+03; Pars: 1.078753E+00, 1.638089E-01, 1.858115E+00
```

```
"  
## [1] "Llh: -1.03527596538820E+03; Pars: 1.077314E+00, 1.647405E-01, 1.852480E+00  
"  
## [1] "Llh: -1.03527782239415E+03; Pars: 1.080095E+00, 1.689937E-01, 1.851016E+00  
"  
## [1] "Llh: -1.03527594280788E+03; Pars: 1.077190E+00, 1.636104E-01, 1.854461E+00  
"  
## [1] "Llh: -1.03527700870047E+03; Pars: 1.079780E+00, 1.605533E-01, 1.853980E+00  
"  
## [1] "Llh: -1.03527596289864E+03; Pars: 1.077543E+00, 1.658368E-01, 1.853523E+00  
"  
## [1] "Llh: -1.03527620951399E+03; Pars: 1.074343E+00, 1.655824E-01, 1.852889E+00  
"  
## [1] "Llh: -1.03527590047039E+03; Pars: 1.078855E+00, 1.643026E-01, 1.853787E+00  
"  
## [1] "Llh: -1.03527614217269E+03; Pars: 1.078411E+00, 1.644260E-01, 1.855370E+00  
"  
## [1] "Llh: -1.03527586296578E+03; Pars: 1.077588E+00, 1.646619E-01, 1.853202E+00  
"  
## [1] "Llh: -1.03527612922297E+03; Pars: 1.078212E+00, 1.625464E-01, 1.854110E+00  
"  
## [1] "Llh: -1.03527586506191E+03; Pars: 1.077710E+00, 1.650142E-01, 1.853670E+00  
"  
## [1] "Llh: -1.03527605385125E+03; Pars: 1.078913E+00, 1.657087E-01, 1.852645E+00  
"  
## [1] "Llh: -1.03527586424647E+03; Pars: 1.077620E+00, 1.641350E-01, 1.854007E+00  
"  
## [1] "Llh: -1.03527587929405E+03; Pars: 1.076426E+00, 1.649047E-01, 1.853465E+00  
"  
## [1] "Llh: -1.03527585207977E+03; Pars: 1.077032E+00, 1.647542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527592404670E+03; Pars: 1.079189E+00, 1.647542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527585207977E+03; Pars: 1.077032E+00, 1.647542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527596674825E+03; Pars: 1.078110E+00, 1.657542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527588846083E+03; Pars: 1.078110E+00, 1.637542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527613000044E+03; Pars: 1.078110E+00, 1.647542E-01, 1.855400E+00  
"  
## [1] "Llh: -1.03527613611902E+03; Pars: 1.078110E+00, 1.647542E-01, 1.851693E+00  
"  
## [1] "Llh: -1.03527585207977E+03; Pars: 1.077032E+00, 1.647542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527599220846E+03; Pars: 1.074881E+00, 1.647542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527597565387E+03; Pars: 1.075956E+00, 1.657542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527594514720E+03; Pars: 1.075956E+00, 1.637542E-01, 1.853546E+00
```

```
"  
## [1] "Llh: -1.03527604719020E+03; Pars: 1.075956E+00, 1.647542E-01, 1.855400E+00  
"  
## [1] "Llh: -1.03527628653218E+03; Pars: 1.075956E+00, 1.647542E-01, 1.851693E+00  
"  
## [1] "Llh: -1.03527596674825E+03; Pars: 1.078110E+00, 1.657542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527597565387E+03; Pars: 1.075956E+00, 1.657542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527616563049E+03; Pars: 1.077032E+00, 1.667542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527585207977E+03; Pars: 1.077032E+00, 1.647542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527615511562E+03; Pars: 1.077032E+00, 1.657542E-01, 1.855400E+00  
"  
## [1] "Llh: -1.03527627698210E+03; Pars: 1.077032E+00, 1.657542E-01, 1.851693E+00  
"  
## [1] "Llh: -1.03527588846083E+03; Pars: 1.078110E+00, 1.637542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527594514720E+03; Pars: 1.075956E+00, 1.637542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527585207977E+03; Pars: 1.077032E+00, 1.647542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527606305709E+03; Pars: 1.077032E+00, 1.627542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527609979732E+03; Pars: 1.077032E+00, 1.637542E-01, 1.855400E+00  
"  
## [1] "Llh: -1.03527622355527E+03; Pars: 1.077032E+00, 1.637542E-01, 1.851693E+00  
"  
## [1] "Llh: -1.03527613000044E+03; Pars: 1.078110E+00, 1.647542E-01, 1.855400E+00  
"  
## [1] "Llh: -1.03527604719020E+03; Pars: 1.075956E+00, 1.647542E-01, 1.855400E+00  
"  
## [1] "Llh: -1.03527615511562E+03; Pars: 1.077032E+00, 1.657542E-01, 1.855400E+00  
"  
## [1] "Llh: -1.03527609979732E+03; Pars: 1.077032E+00, 1.637542E-01, 1.855400E+00  
"  
## [1] "Llh: -1.03527681431729E+03; Pars: 1.077032E+00, 1.647542E-01, 1.857257E+00  
"  
## [1] "Llh: -1.03527585207977E+03; Pars: 1.077032E+00, 1.647542E-01, 1.853546E+00  
"  
## [1] "Llh: -1.03527613611902E+03; Pars: 1.078110E+00, 1.647542E-01, 1.851693E+00  
"  
## [1] "Llh: -1.03527628653218E+03; Pars: 1.075956E+00, 1.647542E-01, 1.851693E+00  
"  
## [1] "Llh: -1.03527627698210E+03; Pars: 1.077032E+00, 1.657542E-01, 1.851693E+00  
"  
## [1] "Llh: -1.03527622355527E+03; Pars: 1.077032E+00, 1.637542E-01, 1.851693E+00  
"  
## [1] "Llh: -1.03527585207977E+03; Pars: 1.077032E+00, 1.647542E-01, 1.853546E+00
```

```

"
## [1] "Llh: -1.03527706079288E+03; Pars: 1.077032E+00, 1.647542E-01, 1.849842E+00
"
## Currently fitting: symmetric t
## [1] "Llh: -1.07525365296849E+03; Pars: -1.750000E+00, 1.733995E-01, 1.320976E+00
"
## [1] "Llh: -1.07449339584390E+03; Pars: -1.771890E+00, 1.733995E-01, 1.320976E+00
"
## [1] "Llh: -1.07563783577213E+03; Pars: -1.750000E+00, 2.021677E-01, 1.320976E+00
"
## [1] "Llh: -1.06919319234427E+03; Pars: -1.750000E+00, 1.733995E-01, 1.359530E+00
"
## [1] "Llh: -1.07058967694497E+03; Pars: -1.764523E+00, 1.446313E-01, 1.346555E+00
"
## [1] "Llh: -1.07170963128474E+03; Pars: -1.760866E+00, 1.590154E-01, 1.340114E+00
"
## [1] "Llh: -1.06769331562757E+03; Pars: -1.774361E+00, 1.542207E-01, 1.363883E+00
"
## [1] "Llh: -1.06427420021417E+03; Pars: -1.786836E+00, 1.446313E-01, 1.385856E+00
"
## [1] "Llh: -1.06208787914589E+03; Pars: -1.762083E+00, 1.350419E-01, 1.408183E+00
"
## [1] "Llh: -1.05697533632731E+03; Pars: -1.757227E+00, 1.158631E-01, 1.453922E+00
"
## [1] "Llh: -1.05660172993123E+03; Pars: -1.764523E+00, 1.446313E-01, 1.453922E+00
"
## [1] "Llh: -1.05097394202697E+03; Pars: -1.764523E+00, 1.446313E-01, 1.510775E+00
"
## [1] "Llh: -1.04805762956624E+03; Pars: -1.789355E+00, 9.668428E-02, 1.544960E+00
"
## [1] "Llh: -1.04215050672266E+03; Pars: -1.809801E+00, 5.832667E-02, 1.646953E+00
"
## [1] "Llh: -1.03997128082251E+03; Pars: -1.766971E+00, 6.791608E-02, 1.700448E+00
"
## [1] "Llh: -1.03696015355128E+03; Pars: -1.757227E+00, 2.955847E-02, 1.883589E+00
"
## [1] "Llh: -1.03682383842370E+03; Pars: -1.796961E+00, 3.914787E-02, 1.926210E+00
"
## [1] "Llh: -1.04409392022940E+03; Pars: -1.817604E+00, 7.902597E-04, 2.217097E+00
"
## [1] "Llh: -1.04463779468781E+03; Pars: -1.811528E+00, -5.994262E-02, 2.179621E+00
"
## [1] "Llh: -1.03861482208791E+03; Pars: -1.799513E+00, -8.799143E-03, 1.988775E+00
"
## [1] "Llh: -1.04507516617487E+03; Pars: -1.759651E+00, -1.838855E-02, 2.267264E+00
"
## [1] "Llh: -1.03802042902688E+03; Pars: -1.796961E+00, 3.914787E-02, 1.783966E+00
"
## [1] "Llh: -1.03815881129091E+03; Pars: -1.767788E+00, 8.070195E-02, 1.746352E+00
"

```

```

## [1] "Llh: -1.03721198987621E+03; Pars: -1.775599E+00, 5.832667E-02, 1.804036E+00
"
## [1] "Llh: -1.03654279597224E+03; Pars: -1.756420E+00, 4.554080E-02, 1.961417E+00
"
## [1] "Llh: -1.03731644515348E+03; Pars: -1.736930E+00, 4.873727E-02, 2.056657E+00
"
## [1] "Llh: -1.03828771987664E+03; Pars: -1.764387E+00, 1.783809E-02, 2.050821E+00
"
## [1] "Llh: -1.03667499919068E+03; Pars: -1.772781E+00, 4.820453E-02, 1.862799E+00
"
## [1] "Llh: -1.03649016969735E+03; Pars: -1.793619E+00, 5.903700E-02, 1.949726E+00
"
## [1] "Llh: -1.03673431182489E+03; Pars: -1.812466E+00, 7.377627E-02, 1.983660E+00
"
## [1] "Llh: -1.03606073202798E+03; Pars: -1.751941E+00, 6.270702E-02, 1.922071E+00
"
## [1] "Llh: -1.03575673361406E+03; Pars: -1.730394E+00, 7.448659E-02, 1.920005E+00
"
## [1] "Llh: -1.03661838517189E+03; Pars: -1.746847E+00, 7.117174E-02, 2.027985E+00
"
## [1] "Llh: -1.03629883615191E+03; Pars: -1.753248E+00, 6.542994E-02, 1.985364E+00
"
## [1] "Llh: -1.03576729526896E+03; Pars: -1.760866E+00, 8.709488E-02, 1.941664E+00
"
## [1] "Llh: -1.03592180875676E+03; Pars: -1.759752E+00, 7.670636E-02, 1.946584E+00
"
## [1] "Llh: -1.03537422436137E+03; Pars: -1.705110E+00, 9.230394E-02, 1.947919E+00
"
## [1] "Llh: -1.03502960542011E+03; Pars: -1.664629E+00, 1.089374E-01, 1.947016E+00
"
## [1] "Llh: -1.03535174022200E+03; Pars: -1.683427E+00, 1.149160E-01, 1.888240E+00
"
## [1] "Llh: -1.03531161897165E+03; Pars: -1.700250E+00, 1.025445E-01, 1.912066E+00
"
## [1] "Llh: -1.03526494532974E+03; Pars: -1.640155E+00, 1.035508E-01, 1.911067E+00
"
## [1] "Llh: -1.03524783955339E+03; Pars: -1.668407E+00, 9.943680E-02, 1.918671E+00
"
## [1] "Llh: -1.03490734798960E+03; Pars: -1.628577E+00, 1.327925E-01, 1.931728E+00
"
## [1] "Llh: -1.03495472500705E+03; Pars: -1.583122E+00, 1.619455E-01, 1.937617E+00
"
## [1] "Llh: -1.03479868257457E+03; Pars: -1.610097E+00, 1.249000E-01, 1.953024E+00
"
## [1] "Llh: -1.03465306316115E+03; Pars: -1.569471E+00, 1.360778E-01, 1.973831E+00
"
## [1] "Llh: -1.03458839192070E+03; Pars: -1.574424E+00, 1.524350E-01, 1.983429E+00
"
## [1] "Llh: -1.03458012736493E+03; Pars: -1.532510E+00, 1.789341E-01, 2.016623E+00
"

```

```
## [1] "Llh: -1.03495894992062E+03; Pars: -1.498341E+00, 1.895989E-01, 2.000865E+00"
##
## [1] "Llh: -1.03470220274619E+03; Pars: -1.535537E+00, 1.694335E-01, 1.987265E+00"
##
## [1] "Llh: -1.03464002434559E+03; Pars: -1.473552E+00, 1.901711E-01, 2.055169E+00"
##
## [1] "Llh: -1.03457096471635E+03; Pars: -1.508295E+00, 1.758265E-01, 2.023589E+00"
##
## [1] "Llh: -1.03443418052654E+03; Pars: -1.536810E+00, 1.577921E-01, 2.022005E+00"
##
## [1] "Llh: -1.03437446383497E+03; Pars: -1.537448E+00, 1.519713E-01, 2.039603E+00"
##
## [1] "Llh: -1.03462680711969E+03; Pars: -1.485715E+00, 2.017435E-01, 2.080742E+00"
##
## [1] "Llh: -1.03450663918628E+03; Pars: -1.505422E+00, 1.853271E-01, 2.053484E+00"
##
## [1] "Llh: -1.03432687937895E+03; Pars: -1.501660E+00, 1.631491E-01, 2.061332E+00"
##
## [1] "Llh: -1.03424476489931E+03; Pars: -1.486911E+00, 1.552566E-01, 2.084057E+00"
##
## [1] "Llh: -1.03430527594406E+03; Pars: -1.510714E+00, 1.525435E-01, 2.094958E+00"
##
## [1] "Llh: -1.03429802103344E+03; Pars: -1.510108E+00, 1.583643E-01, 2.076883E+00"
##
## [1] "Llh: -1.03435106543481E+03; Pars: -1.516787E+00, 1.250677E-01, 2.080113E+00"
##
## [1] "Llh: -1.03429181190339E+03; Pars: -1.513922E+00, 1.401326E-01, 2.073423E+00"
##
## [1] "Llh: -1.03418599792266E+03; Pars: -1.471704E+00, 1.505309E-01, 2.117358E+00"
##
## [1] "Llh: -1.03413111074300E+03; Pars: -1.441913E+00, 1.498108E-01, 2.157340E+00"
##
## [1] "Llh: -1.03415642378006E+03; Pars: -1.451641E+00, 1.384357E-01, 2.132711E+00"
##
## [1] "Llh: -1.03417373989594E+03; Pars: -1.465597E+00, 1.434178E-01, 2.118615E+00"
##
## [1] "Llh: -1.03411718879900E+03; Pars: -1.411297E+00, 1.555361E-01, 2.176801E+00"
##
## [1] "Llh: -1.03416139462577E+03; Pars: -1.367947E+00, 1.632379E-01, 2.230406E+00"
##
## [1] "Llh: -1.03408183402045E+03; Pars: -1.387919E+00, 1.405984E-01, 2.229478E+00"
##
## [1] "Llh: -1.03410963002667E+03; Pars: -1.346247E+00, 1.332694E-01, 2.305951E+00"
##
## [1] "Llh: -1.03409091288471E+03; Pars: -1.377887E+00, 1.588612E-01, 2.244028E+00"
##
## [1] "Llh: -1.03408563597884E+03; Pars: -1.395112E+00, 1.537548E-01, 2.215666E+00"
##
## [1] "Llh: -1.03410413507186E+03; Pars: -1.358433E+00, 1.501155E-01, 2.258216E+00"
```

```
## [1] "Llh: -1.03408600772479E+03; Pars: -1.377694E+00, 1.500393E-01, 2.232563E+00"
##
## [1] "Llh: -1.03408121953159E+03; Pars: -1.363840E+00, 1.407256E-01, 2.276087E+00"
##
## [1] "Llh: -1.03412058106448E+03; Pars: -1.342207E+00, 1.333203E-01, 2.327415E+00"
##
## [1] "Llh: -1.03409267380463E+03; Pars: -1.386463E+00, 1.400133E-01, 2.247986E+00"
##
## [1] "Llh: -1.03407705834664E+03; Pars: -1.379867E+00, 1.475328E-01, 2.236409E+00"
##
## [1] "Llh: -1.03410588921742E+03; Pars: -1.359862E+00, 1.321497E-01, 2.279246E+00"
##
## [1] "Llh: -1.03407609589506E+03; Pars: -1.385988E+00, 1.483536E-01, 2.231393E+00"
##
## [1] "Llh: -1.03407588047050E+03; Pars: -1.365318E+00, 1.504762E-01, 2.266422E+00"
##
## [1] "Llh: -1.03408635326381E+03; Pars: -1.354516E+00, 1.554151E-01, 2.285123E+00"
##
## [1] "Llh: -1.03409701997892E+03; Pars: -1.390547E+00, 1.568494E-01, 2.213723E+00"
##
## [1] "Llh: -1.03407462097876E+03; Pars: -1.370341E+00, 1.447566E-01, 2.260333E+00"
##
## [1] "Llh: -1.03407480746906E+03; Pars: -1.367789E+00, 1.481914E-01, 2.269037E+00"
##
## [1] "Llh: -1.03407377208860E+03; Pars: -1.370772E+00, 1.480267E-01, 2.260835E+00"
##
## [1] "Llh: -1.03407923166004E+03; Pars: -1.352381E+00, 1.471528E-01, 2.294099E+00"
##
## [1] "Llh: -1.03407397943052E+03; Pars: -1.377297E+00, 1.480534E-01, 2.246907E+00"
##
## [1] "Llh: -1.03407641332217E+03; Pars: -1.380415E+00, 1.434149E-01, 2.245657E+00"
##
## [1] "Llh: -1.03407412136527E+03; Pars: -1.369035E+00, 1.487109E-01, 2.261213E+00"
##
## [1] "Llh: -1.03407605167469E+03; Pars: -1.374372E+00, 1.517708E-01, 2.252291E+00"
##
## [1] "Llh: -1.03407376058298E+03; Pars: -1.371345E+00, 1.465101E-01, 2.258320E+00"
##
## [1] "Llh: -1.03407397518395E+03; Pars: -1.377263E+00, 1.463493E-01, 2.249494E+00"
##
## [1] "Llh: -1.03407367766576E+03; Pars: -1.375189E+00, 1.469397E-01, 2.252418E+00"
##
## [1] "Llh: -1.03407440896937E+03; Pars: -1.367626E+00, 1.462643E-01, 2.267517E+00"
##
## [1] "Llh: -1.03407365313518E+03; Pars: -1.374856E+00, 1.476061E-01, 2.252042E+00"
##
## [1] "Llh: -1.03407411316839E+03; Pars: -1.376837E+00, 1.460105E-01, 2.247699E+00"
##
## [1] "Llh: -1.03407361853597E+03; Pars: -1.372279E+00, 1.475227E-01, 2.257544E+00"
```

```
## [1] "Llh: -1.03407386925612E+03; Pars: -1.376887E+00, 1.482022E-01, 2.249688E+00"
##
## [1] "Llh: -1.03407363234870E+03; Pars: -1.372723E+00, 1.469331E-01, 2.256159E+00"
##
## [1] "Llh: -1.03407366693764E+03; Pars: -1.371389E+00, 1.477683E-01, 2.258080E+00"
##
## [1] "Llh: -1.03407361401817E+03; Pars: -1.372335E+00, 1.475611E-01, 2.256663E+00"
##
## [1] "Llh: -1.03407375582828E+03; Pars: -1.370051E+00, 1.470719E-01, 2.261546E+00"
##
## [1] "Llh: -1.03407360430952E+03; Pars: -1.373649E+00, 1.474725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407365665579E+03; Pars: -1.372785E+00, 1.481044E-01, 2.256254E+00"
##
## [1] "Llh: -1.03407360567858E+03; Pars: -1.372738E+00, 1.472260E-01, 2.256183E+00"
##
## [1] "Llh: -1.03407366306948E+03; Pars: -1.374397E+00, 1.474725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407360430952E+03; Pars: -1.373649E+00, 1.474725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407375343092E+03; Pars: -1.374022E+00, 1.484725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407371990993E+03; Pars: -1.374022E+00, 1.464725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407393308753E+03; Pars: -1.374022E+00, 1.474725E-01, 2.256669E+00"
##
## [1] "Llh: -1.03407378235714E+03; Pars: -1.374022E+00, 1.474725E-01, 2.252161E+00"
##
## [1] "Llh: -1.03407360430952E+03; Pars: -1.373649E+00, 1.474725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407372209429E+03; Pars: -1.372902E+00, 1.474725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407377644778E+03; Pars: -1.373275E+00, 1.484725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407375603058E+03; Pars: -1.373275E+00, 1.464725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407367981858E+03; Pars: -1.373275E+00, 1.474725E-01, 2.256669E+00"
##
## [1] "Llh: -1.03407409457982E+03; Pars: -1.373275E+00, 1.474725E-01, 2.252161E+00"
##
## [1] "Llh: -1.03407375343092E+03; Pars: -1.374022E+00, 1.484725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407377644778E+03; Pars: -1.373275E+00, 1.484725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407413159530E+03; Pars: -1.373649E+00, 1.494725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407360430952E+03; Pars: -1.373649E+00, 1.474725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407392936254E+03; Pars: -1.373649E+00, 1.484725E-01, 2.256669E+00"
```

```
## [1] "Llh: -1.03407404853391E+03; Pars: -1.373649E+00, 1.484725E-01, 2.252161E+00"
##
## [1] "Llh: -1.03407371990993E+03; Pars: -1.374022E+00, 1.464725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407375603058E+03; Pars: -1.373275E+00, 1.464725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407360430952E+03; Pars: -1.373649E+00, 1.474725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407407764101E+03; Pars: -1.373649E+00, 1.454725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407388931288E+03; Pars: -1.373649E+00, 1.464725E-01, 2.256669E+00"
##
## [1] "Llh: -1.03407403467032E+03; Pars: -1.373649E+00, 1.464725E-01, 2.252161E+00"
##
## [1] "Llh: -1.03407393308753E+03; Pars: -1.374022E+00, 1.474725E-01, 2.256669E+00"
##
## [1] "Llh: -1.03407367981858E+03; Pars: -1.373275E+00, 1.474725E-01, 2.256669E+00"
##
## [1] "Llh: -1.03407392936254E+03; Pars: -1.373649E+00, 1.484725E-01, 2.256669E+00"
##
## [1] "Llh: -1.03407388931288E+03; Pars: -1.373649E+00, 1.464725E-01, 2.256669E+00"
##
## [1] "Llh: -1.03407445646488E+03; Pars: -1.373649E+00, 1.474725E-01, 2.258927E+00"
##
## [1] "Llh: -1.03407360430952E+03; Pars: -1.373649E+00, 1.474725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407378235714E+03; Pars: -1.374022E+00, 1.474725E-01, 2.252161E+00"
##
## [1] "Llh: -1.03407409457982E+03; Pars: -1.373275E+00, 1.474725E-01, 2.252161E+00"
##
## [1] "Llh: -1.03407404853391E+03; Pars: -1.373649E+00, 1.484725E-01, 2.252161E+00"
##
## [1] "Llh: -1.03407403467032E+03; Pars: -1.373649E+00, 1.464725E-01, 2.252161E+00"
##
## [1] "Llh: -1.03407360430952E+03; Pars: -1.373649E+00, 1.474725E-01, 2.254414E+00"
##
## [1] "Llh: -1.03407472081919E+03; Pars: -1.373649E+00, 1.474725E-01, 2.249909E+00"
##
## Currently fitting: gauss
```

```

##   model symmetric lambda alpha.bar      mu sigma gamma aic llh
## 8    NIG      TRUE -0.50000  0.47277 0.15079 1.9311 0.00000 2069.0 -1031.5
## 3    NIG      FALSE -0.50000  0.47592 0.21013 1.9263 -0.10686 2070.3 -1031.2
## 6    ghyp     TRUE -0.26886  0.48899 0.15181 1.9200 0.00000 2070.9 -1031.4
## 1    ghyp     FALSE -0.25085  0.49023 0.21364 1.9146 -0.11024 2072.1 -1031.0
## 10   t       TRUE -1.37365  0.00000 0.14747 2.2544 0.00000 2074.1 -1034.1
## 7    hyp      TRUE  1.00000  0.26353 0.15048 1.8407 0.00000 2074.6 -1034.3
## converged n.iter
## 8      TRUE    104
## 3      TRUE    121
## 6      TRUE    189
## 1      TRUE    510
## 10     TRUE    106
## 7      TRUE    106

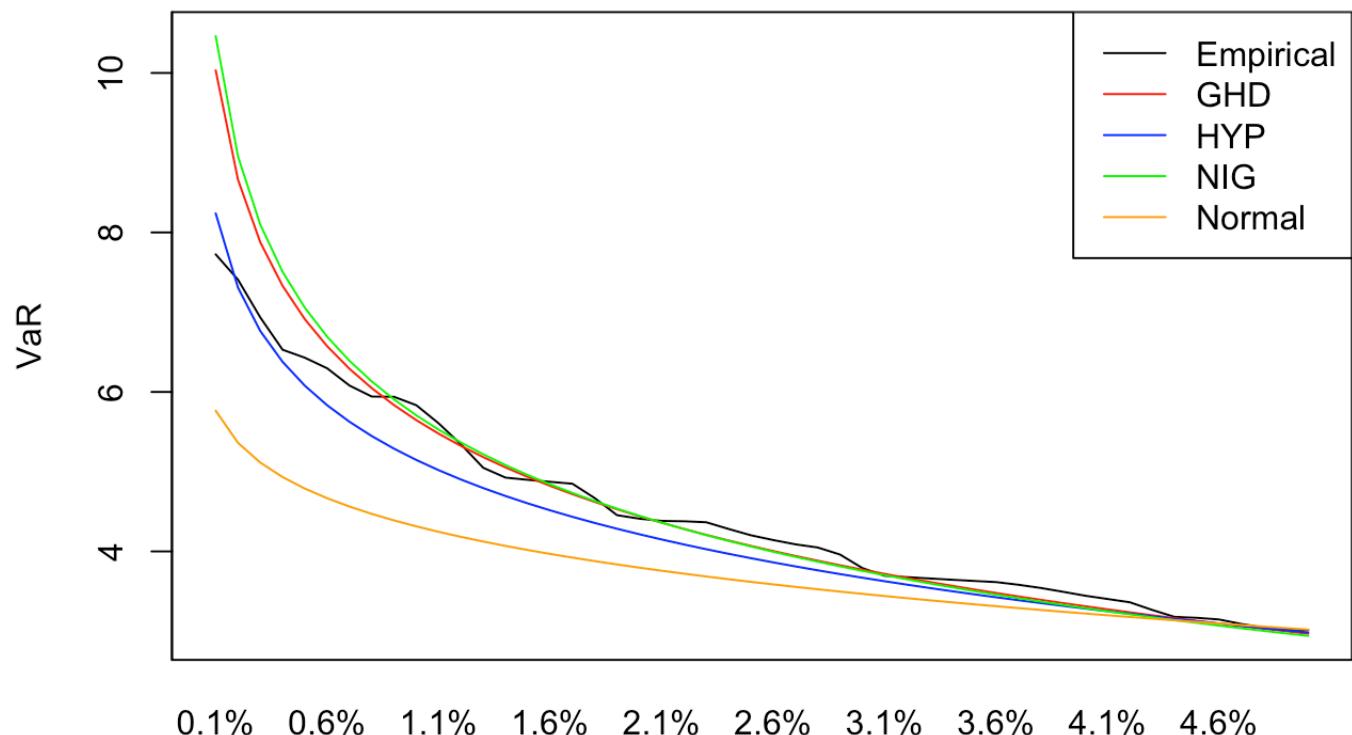
```

```

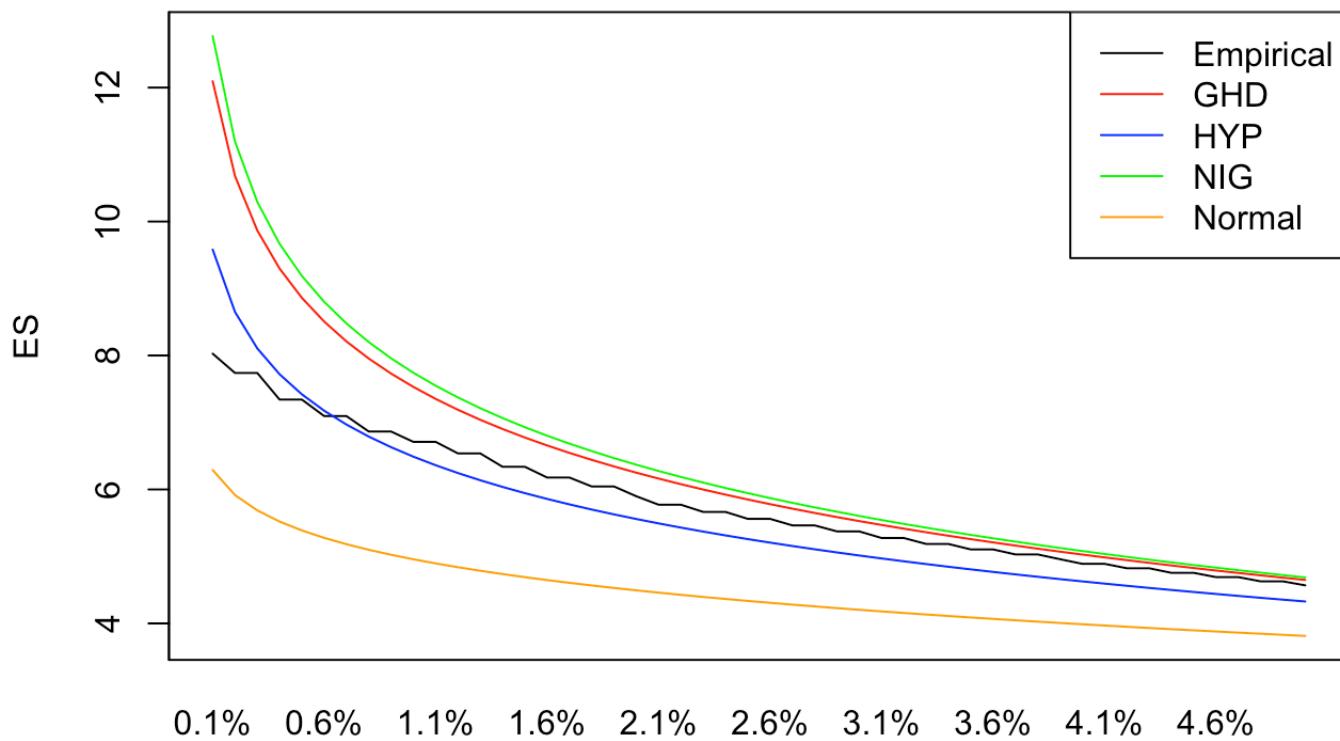
## $statistic
##      L
## 0.90068
##
## $p.value
## [1] 0.64738
##
## $df
## [1] 1
##
## $H0
## [1] TRUE

```

The VaR based on the normal distribution can be computed by providing the necessary estimates for the location and scale. The VaR values thus determined are compared to their empirical counterparts, which are determined by the quantile() function.



Calculate and plot the Expected Shortfall (using all models)



Garch Model

```
EWPort.AdjClose<-(GS.Pandemic$Adj.Close+JPM.Pandemic$Adj.Close+AAPL.Pandemic$Adj.Close+AMZN.Pandemic$Adj.Close+DTE.Pandemic$Adj.Close+AES.Pandemic$Adj.Close)/6
```

```
EWPortReturn<-returnseries(EWPort.AdjClose)
```

```
library(timeSeries)
```

```
library('fGarch')
```

```
date<-JPM>Date
```

```
str(date)
```

```
## NULL
```

```
GETS<-timeSeries(EWPortReturn, charvec = date)
```

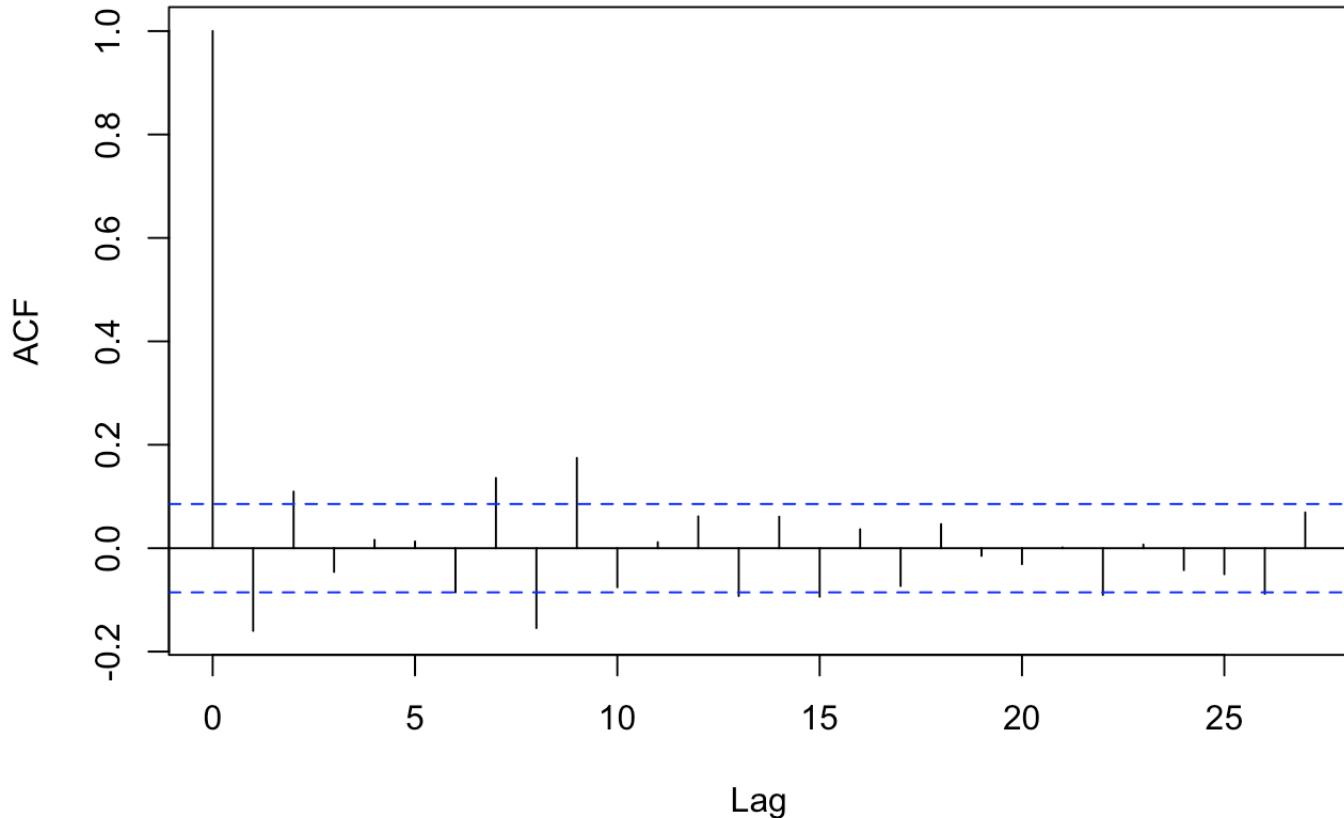
```
GETS$Return <- GETS[-c(1)]
```

```
head(GETS$Return)
```

```
## [1] 0.54521 0.26106 0.24645 0.24322 1.58492 1.12101
```

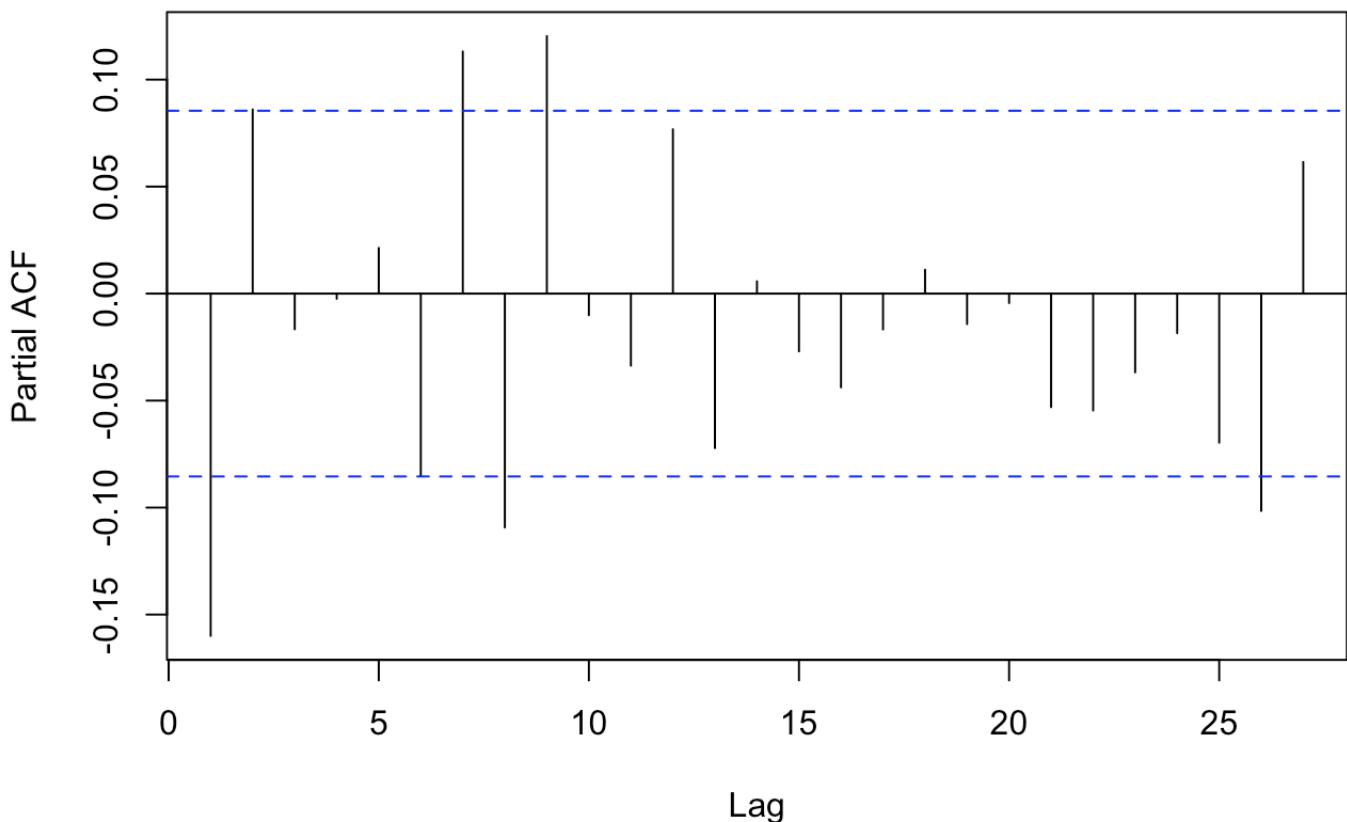
```
acf(GETS$Return, na.action = na.pass)
```

Series GETS\$Return



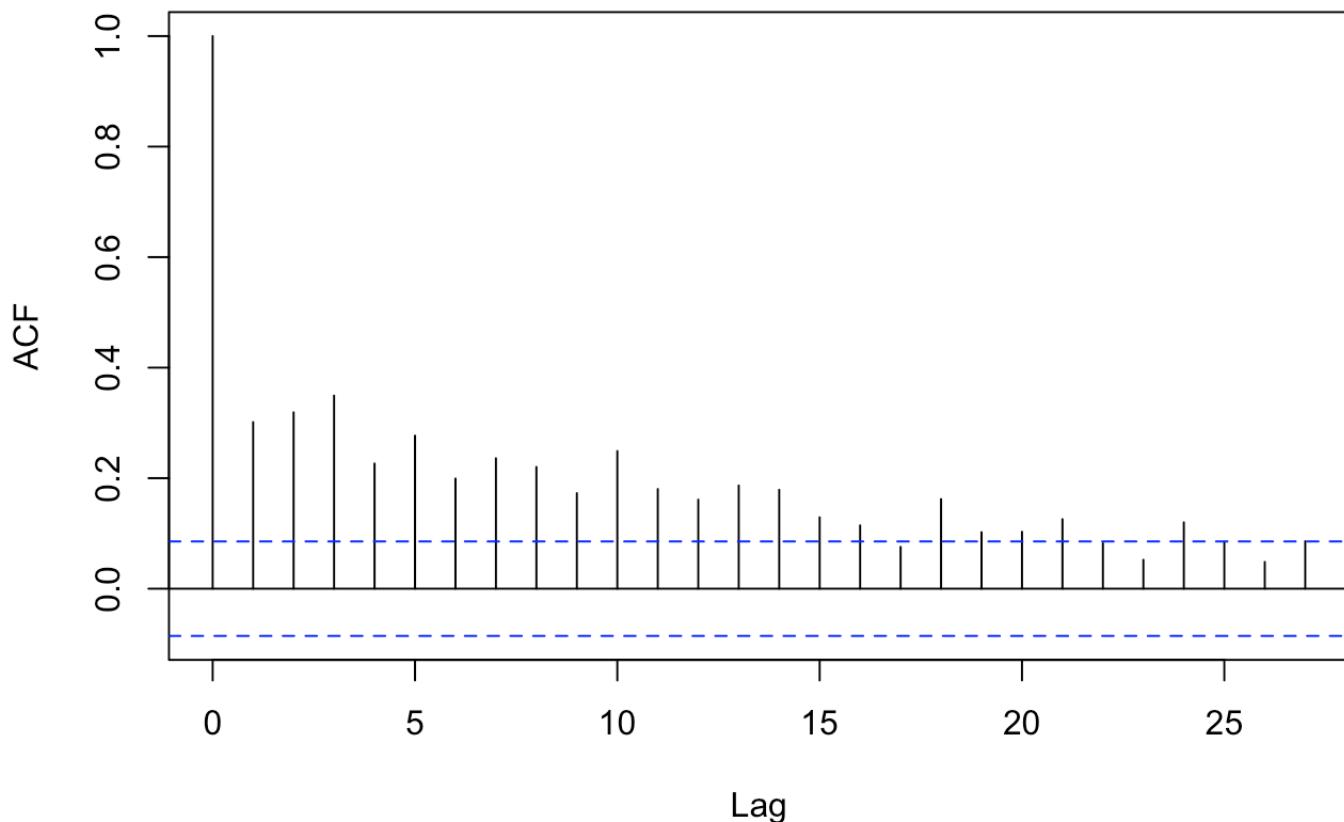
```
pacf(GETS$Return, na.action = na.pass)
```

Series GETS\$Return



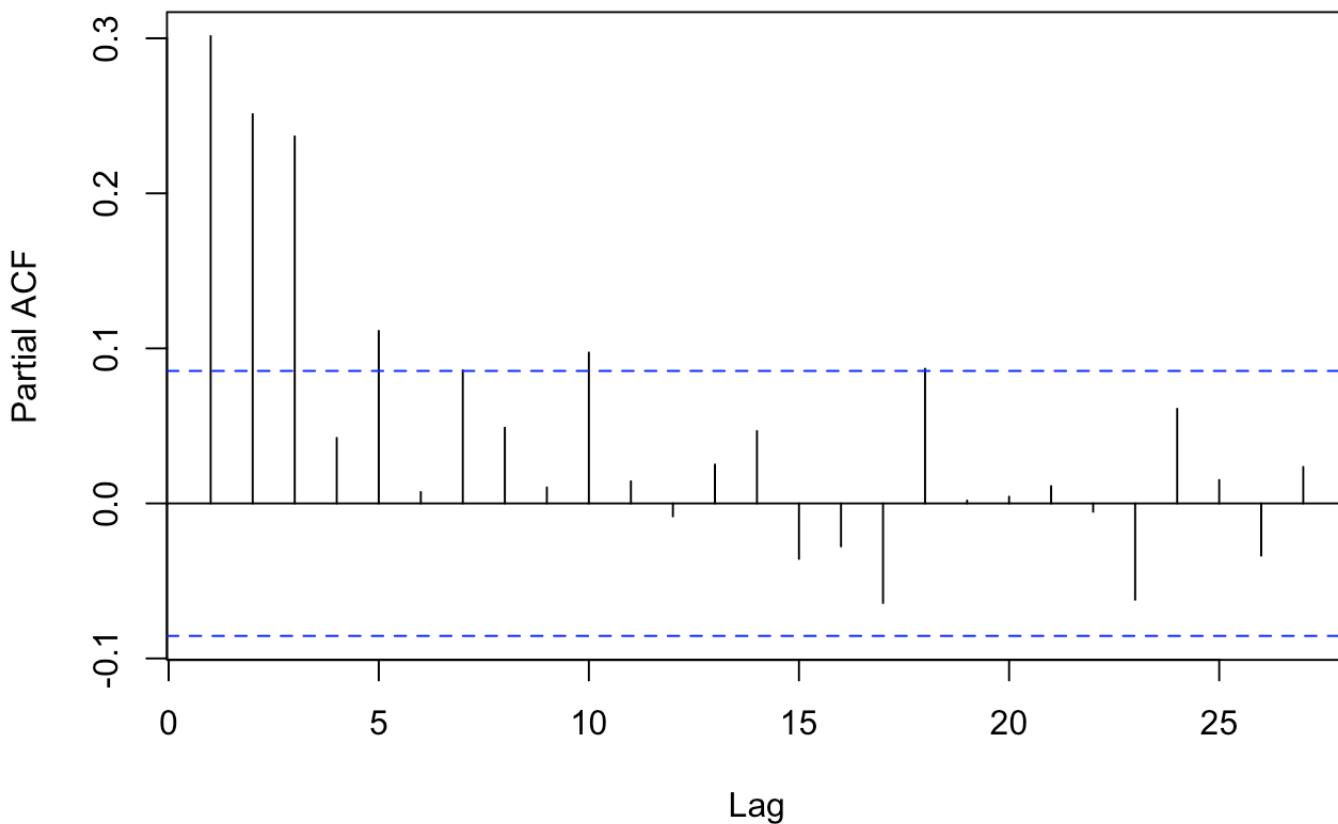
```
acf(abs(GETS$Return), na.action = na.pass)
```

Series abs(GETS\$Return)



```
pacf(abs(GETS$Return), na.action = na.pass)
```

Series abs(GETS\$Return)



```
mean(GETS$Return, na.rm = TRUE)
```

```
## [1] 0.10528
```

```
GETSComp <- removeNA(GETS)
```

```
garchFi<-garchFit(~garch(1,1), data=GETSComp)
```

```
##  
## Series Initialization:  
## ARMA Model: arma  
## Formula Mean: ~ arma(0, 0)  
## GARCH Model: garch  
## Formula Variance: ~ garch(1, 1)  
## ARMA Order: 0 0  
## Max ARMA Order: 0  
## GARCH Order: 1 1  
## Max GARCH Order: 1  
## Maximum Order: 1  
## Conditional Dist: norm
```

```

## h.start:          2
## llh.start:       1
## Length of Series: 525
## Recursion Init: mci
## Series Scale:   1.8176
##
## Parameter Initialization:
## Initial Parameters: $params
## Limits of Transformations: $U, $V
## Which Parameters are Fixed? $includes
## Parameter Matrix:
##           U      V  params includes
## mu     -0.57460047  0.5746  0.05746    TRUE
## omega   0.00000100 100.0000 0.10000    TRUE
## alphal  0.00000001  1.0000  0.10000    TRUE
## gammal -0.99999999  1.0000  0.10000   FALSE
## betal   0.00000001  1.0000  0.80000    TRUE
## delta   0.00000000  2.0000  2.00000   FALSE
## skew    0.10000000 10.0000 1.00000   FALSE
## shape   1.00000000 10.0000 4.00000   FALSE
## Index List of Parameters to be Optimized:
##     mu  omega alphal betal
##     1      2      3      5
## Persistence:          0.9
##
##
## --- START OF TRACE ---
## Selected Algorithm: nlminb
##
## R coded nlminb Solver:
##
## 0: 683.91399: 0.0574600 0.100000 0.100000 0.800000
## 1: 681.00425: 0.0574607 0.0784227 0.100794 0.788099
## 2: 678.64944: 0.0574618 0.0776613 0.123822 0.796874
## 3: 677.78360: 0.0574632 0.0595322 0.128624 0.791244
## 4: 676.56673: 0.0574672 0.0578612 0.145530 0.800982
## 5: 676.41616: 0.0574728 0.0501012 0.148076 0.801251
## 6: 676.39770: 0.0575149 0.0479631 0.153493 0.806938
## 7: 676.35603: 0.0575707 0.0503953 0.155725 0.799526
## 8: 676.35321: 0.0575740 0.0516521 0.154712 0.799273
## 9: 676.35116: 0.0576117 0.0508370 0.153527 0.799687
## 10: 676.34883: 0.0576821 0.0509824 0.152959 0.800597
## 11: 676.34843: 0.0577753 0.0510167 0.152858 0.800436
## 12: 676.34782: 0.0579558 0.0513205 0.153406 0.799787
## 13: 676.34677: 0.0585844 0.0507644 0.151597 0.802032
## 14: 676.34543: 0.0592346 0.0505752 0.151734 0.801648
## 15: 676.34379: 0.0598848 0.0507691 0.152091 0.801423
## 16: 676.34237: 0.0612280 0.0515175 0.152682 0.799837
## 17: 676.34216: 0.0615882 0.0514023 0.153172 0.799678
## 18: 676.34213: 0.0615234 0.0515312 0.153421 0.799403

```

```

## 19:      676.34213: 0.0615413 0.0515026 0.153362 0.799470
## 20:      676.34213: 0.0615412 0.0515024 0.153362 0.799470
##
## Final Estimate of the Negative LLH:
## LLH: 990.05      norm LLH: 1.8858
##      mu     omega   alphal    betal
## 0.11186 0.17015 0.15336 0.79947
##
## R-optimhess Difference Approximated Hessian Matrix:
##          mu     omega   alphal    betal
## mu -264.5116 -0.5929  20.107 -14.178
## omega -0.5929 -1701.2250 -2007.091 -3310.513
## alphal 20.1069 -2007.0913 -4507.020 -5408.811
## betal -14.1779 -3310.5127 -5408.811 -7808.418
## attr(,"time")
## Time difference of 0.0056601 secs
##
## --- END OF TRACE ---
##
##
## Time to Estimate Parameters:
## Time difference of 0.030691 secs

```

```

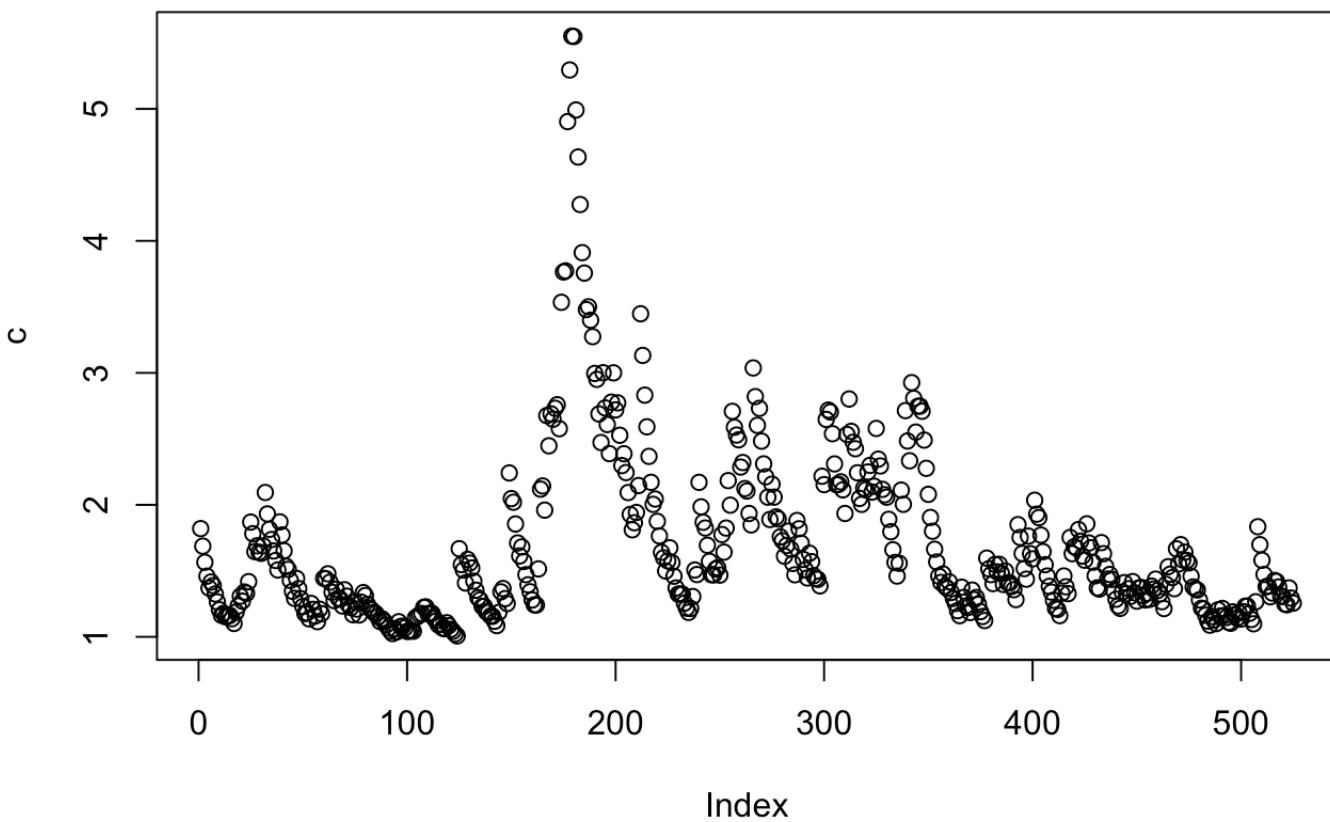
## Warning: Using formula(x) is deprecated when x is a character vector of length > 1
.
## Consider formula(paste(x, collapse = " ")) instead.

```

```

a <- coef(garchFi)
b<-formula(garchFi)
c<-volatility(garchFi)
plot(c)

```



```
predict(garchFi, n.ahead =10)
```

	meanForecast	meanError	standardDeviation
## 1	0.11186	2.8451	2.8451
## 2	0.11186	2.8077	2.8077
## 3	0.11186	2.7715	2.7715
## 4	0.11186	2.7366	2.7366
## 5	0.11186	2.7030	2.7030
## 6	0.11186	2.6705	2.6705
## 7	0.11186	2.6392	2.6392
## 8	0.11186	2.6090	2.6090
## 9	0.11186	2.5799	2.5799
## 10	0.11186	2.5519	2.5519

```
# with SD
garchfi2<-garchFit(~garch(1,1), data=GETSComp, cond.dist = "std")
```

```
##
## Series Initialization:
## ARMA Model: arma
```

```

## Formula Mean: ~ arma(0, 0)
## GARCH Model: garch
## Formula Variance: ~ garch(1, 1)
## ARMA Order: 0 0
## Max ARMA Order: 0
## GARCH Order: 1 1
## Max GARCH Order: 1
## Maximum Order: 1
## Conditional Dist: std
## h.start: 2
## llh.start: 1
## Length of Series: 525
## Recursion Init: mci
## Series Scale: 1.8176
##
## Parameter Initialization:
## Initial Parameters: $params
## Limits of Transformations: $U, $V
## Which Parameters are Fixed? $includes
## Parameter Matrix:
##          U      V  params includes
## mu -0.57460047 0.5746 0.05746 TRUE
## omega 0.00000100 100.0000 0.10000 TRUE
## alphal 0.00000001 1.0000 0.10000 TRUE
## gammal -0.99999999 1.0000 0.10000 FALSE
## betal 0.00000001 1.0000 0.80000 TRUE
## delta 0.00000000 2.0000 2.00000 FALSE
## skew 0.10000000 10.0000 1.00000 FALSE
## shape 1.00000000 10.0000 4.00000 TRUE
## Index List of Parameters to be Optimized:
## mu omega alphal betal shape
## 1     2     3     5     8
## Persistence: 0.9
##
##
## --- START OF TRACE ---
## Selected Algorithm: nlminb
##
## R coded nlminb Solver:
##
## 0: 663.82033: 0.0574600 0.100000 0.100000 0.800000 4.00000
## 1: 657.38631: 0.0574963 0.0478085 0.175549 0.805943 4.00103
## 2: 657.30018: 0.0574996 0.0495752 0.177353 0.808447 4.00120
## 3: 657.25868: 0.0575087 0.0464664 0.178732 0.809446 4.00149
## 4: 657.24385: 0.0575472 0.0455065 0.179153 0.816326 4.00284
## 5: 657.18043: 0.0576187 0.0406911 0.175819 0.819421 4.00514
## 6: 657.15915: 0.0577658 0.0396894 0.174125 0.823573 4.00994
## 7: 656.89589: 0.0650782 0.0307889 0.159851 0.835708 4.25547
## 8: 656.67857: 0.0722682 0.0410887 0.169495 0.815603 4.50174
## 9: 656.65383: 0.0701015 0.0419868 0.169508 0.804269 4.77626

```

```

## 10: 656.62236: 0.0567236 0.0380876 0.170626 0.810902 4.92674
## 11: 656.60252: 0.0564682 0.0379035 0.162657 0.817067 4.93259
## 12: 656.55374: 0.0651501 0.0369001 0.163548 0.820356 4.90136
## 13: 656.53479: 0.0682746 0.0354001 0.156853 0.823081 4.97168
## 14: 656.53122: 0.0671877 0.0357766 0.158726 0.822210 4.97076
## 15: 656.53108: 0.0671338 0.0356616 0.158347 0.822495 4.98205
## 16: 656.53106: 0.0671658 0.0356677 0.158301 0.822436 4.98933
## 17: 656.53106: 0.0671639 0.0356682 0.158311 0.822432 4.98951
## 18: 656.53106: 0.0671640 0.0356686 0.158311 0.822431 4.98951
##
## Final Estimate of the Negative LLH:
## LLH: 970.24      norm LLH: 1.8481
## mu     omega   alpha1   beta1   shape
## 0.12208 0.11784 0.15831 0.82243 4.98951
##
## R-optimhess Difference Approximated Hessian Matrix:
##          mu        omega      alpha1      beta1      shape
## mu    -324.9168      5.5822    -21.353    -27.649   -1.2116
## omega      5.5822 -1449.9008  -1588.634   -2739.585  -28.6692
## alpha1    -21.3529  -1588.6340  -3312.995  -4249.684  -49.0494
## beta1     -27.6490  -2739.5855  -4249.684  -6501.154  -69.0160
## shape     -1.2116    -28.6692    -49.049    -69.016   -1.5972
## attr(,"time")
## Time difference of 0.011238 secs
##
## --- END OF TRACE ---
##
##
## Time to Estimate Parameters:
## Time difference of 0.032632 secs

```

```

## Warning: Using formula(x) is deprecated when x is a character vector of length > 1
.
## Consider formula(paste(x, collapse = " ")) instead.

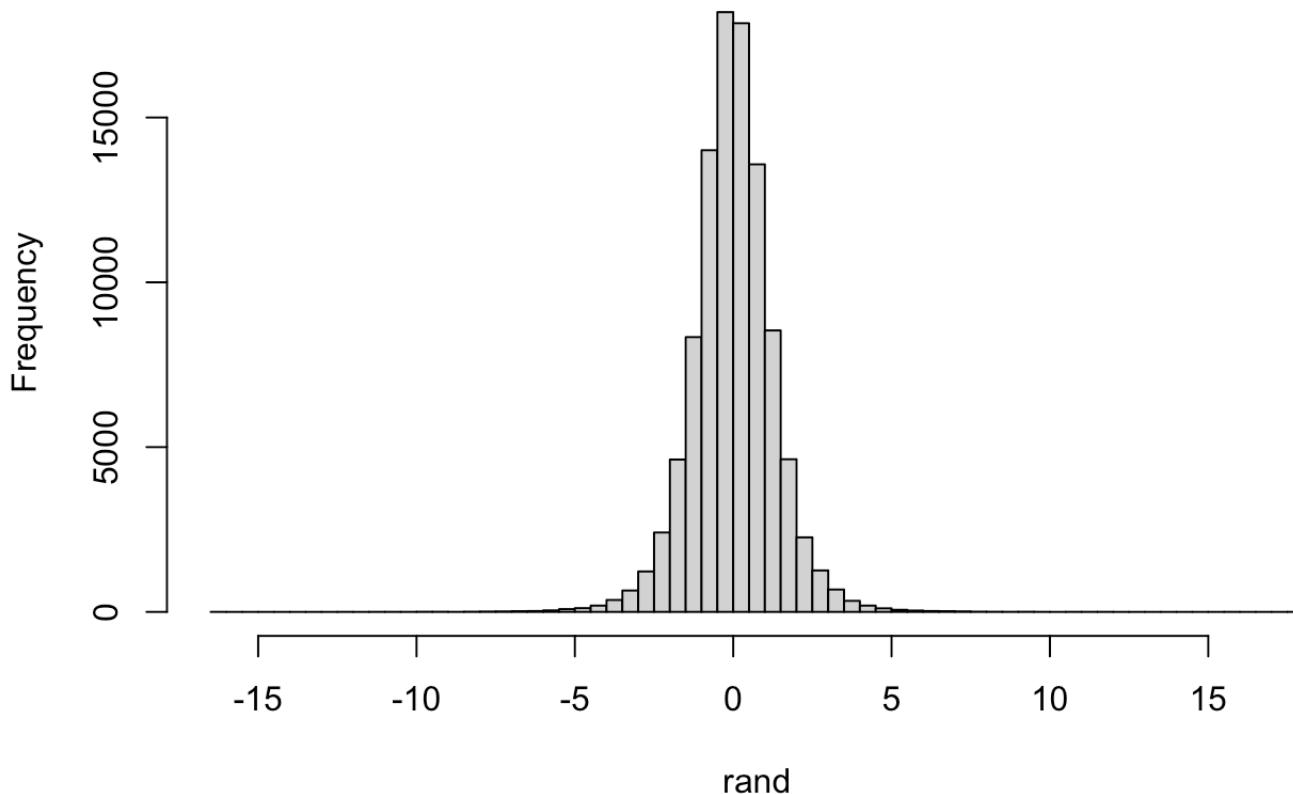
```

```

sigma <- as.numeric(predict(garchfi2, n.ahead = 1)[3])
df <- as.numeric(coef(garchfi2)["shape"])
rand<-rt(100000, df=df)
hist(rand, breaks=100)

```

Histogram of rand



```
quant<-qt(.01, df=df)
a<-sigma*quant #VaR
b<-max(tail(sort(rand, decreasing = T),1000))*sigma #VaR
a/b
```

```
## [1] 0.98844
```

```
d<-mean(tail(sort(rand, decreasing = T),1000))*sigma #ES
head(d/c)
```

```
## [1] -7.1638 -7.7270 -8.3301 -8.9305 -9.5170 -9.2113
```

Markvitz Optimization

```
library(xts)
library(quantmod)
library(readxl)

JPM.Monthly<-to.monthly(data.JPM.Pandemic)
GS.Monthly<-to.monthly(data.GS.Pandemic)
DTE.Monthly<-to.monthly(data.DTE.Pandemic)
AES.Monthly<-to.monthly(data.AES.Pandemic)
AAPL.Monthly<-to.monthly(dataAAPL.Pandemic)
AMZN.Monthly<-to.monthly(dataAMZN.Pandemic)

AMZN.monthly.ret <-Delt(AMZN.Monthly$data.AMZNPandemic.Adjusted)
names(AMZN.monthly.ret)<-paste("AMZN.ret.monthly")
AMZN.monthly.ret[c(1:3,nrow(AMZN.monthly.ret))]
```

```
##           AMZN.ret.monthly
## Jul 2019          NA
## Aug 2019       -0.31583
## Sep 2019       -0.13535
## Jul 2021        3.14189
```

```
JPM.monthly.ret <-Delt(JPM.Monthly$data.JPM.Pandemic.Adjusted)
names(JPM.monthly.ret)<-paste("JPM.ret.monthly")
JPM.monthly.ret[c(1:3,nrow(JPM.monthly.ret))]
```

```
##           JPM.ret.monthly
## Jul 2019          NA
## Aug 2019      -0.254814
## Sep 2019      -0.040835
## Jul 2021      -0.217572
```

```
GS.monthly.ret <-Delt(GS.Monthly$data.GS.Pandemic.Adjusted)
names(GS.monthly.ret)<-paste("GS.ret.monthly")
GS.monthly.ret[c(1:3,nrow(GS.monthly.ret))]
```

```
##           GS.ret.monthly
## Jul 2019          NA
## Aug 2019      -0.23178
## Sep 2019       0.17318
## Jul 2021      -0.34109
```

```
DTE.monthly.ret <-Delt(DTE.Monthly$data.DTE.Pandemic.Adjusted)
names(DTE.monthly.ret)<-paste("DTE.ret.monthly")
DTE.monthly.ret[c(1:3,nrow(DTE.monthly.ret))]
```

```
##           DTE.ret.monthly
## Jul 2019          NA
## Aug 2019      -0.036296
## Sep 2019      -0.024309
## Jul 2021      -0.582009
```

```
AES.monthly.ret <-Delt(AES.Monthly$data.AES.Pandemic.Adjusted)
names(AES.monthly.ret)<-paste("AES.ret.monthly")
AES.monthly.ret[c(1:3,nrow(AES.monthly.ret))]
```

```
##           AES.ret.monthly
## Jul 2019          NA
## Aug 2019      -0.58027
## Sep 2019      -0.30263
## Jul 2021      -0.17699
```

```
AAPL.monthly.ret <-Delt(AAPL.Monthly$data.AAPL.Pandemic.Adjusted)
names(AAPL.monthly.ret)<-paste("AAPL.ret.monthly")
AAPL.monthly.ret[c(1:3,nrow(AAPL.monthly.ret))]
```

```
##           AAPL.ret.monthly
## Jul 2019          NA
## Aug 2019      -0.69482
## Sep 2019      0.22863
## Jul 2021      0.11256
```

```
options(digits=3)
returns <-
cbind(JPM.monthly.ret[-1,],GS.monthly.ret[-1,],AES.monthly.ret[-1,],DTE.monthly.ret[-1,],AAPL.monthly.ret[-1,],AMZN.monthly.ret[-1,])
names(returns) <-
paste(c("JPM.Ret","GS.Ret","AES.Ret","DTE.Ret","AAPL.Ret","AMZN.Ret"))
returns[c(1:3,nrow(returns)),]
```

```
##           JPM.Ret  GS.Ret  AES.Ret  DTE.Ret  AAPL.Ret  AMZN.Ret
## Aug 2019 -0.2548 -0.2318 -0.580 -0.0363   -0.695   -0.3158
## Sep 2019 -0.0408  0.1732 -0.303 -0.0243    0.229   -0.1354
## Oct 2019  0.1880  0.0455  0.499  0.9824    0.339    0.0516
## Jul 2021 -0.2176 -0.3411 -0.177 -0.5820    0.113    3.1419
```

```
#Converting data to matrix
mat.ret<-matrix(returns,nrow(returns))
mat.ret [1:3,]
```

```
##      [,1]   [,2]   [,3]   [,4]   [,5]   [,6]
## [1,] -0.2548 -0.2318 -0.580 -0.0363 -0.695 -0.3158
## [2,] -0.0408  0.1732 -0.303 -0.0243  0.229 -0.1354
## [3,]  0.1880  0.0455  0.499  0.9824  0.339  0.0516
```

```
colnames(mat.ret) <- c("JPM", "GS", "AES", "DTE", "AAPL", "AMZN")
head(mat.ret)
```

```
##          JPM       GS       AES       DTE       AAPL      AMZN
## [1,] -0.2548 -0.2318 -0.580 -0.0363 -0.695 -0.3158
## [2,] -0.0408  0.1732 -0.303 -0.0243  0.229 -0.1354
## [3,]  0.1880  0.0455  0.499  0.9824  0.339  0.0516
## [4,] -0.5071 -0.5894 -0.558 -0.6315 -0.665 -0.3084
## [5,]  0.2608  0.8785  1.565  0.2263  1.162  0.3032
## [6,]  0.7753  1.4066 -0.397  0.4736  0.980  5.2108
```

```
VCOV <- cov(mat.ret)
VCOV
```

```
##          JPM       GS       AES       DTE       AAPL      AMZN
## JPM  0.3978  0.228  0.355  0.274  0.213  0.0671
## GS   0.2285  0.234  0.190  0.170  0.190  0.2384
## AES  0.3555  0.190  0.518  0.284  0.195 -0.1843
## DTE  0.2736  0.170  0.284  0.376  0.117 -0.1132
## AAPL 0.2130  0.190  0.195  0.117  0.393  0.3567
## AMZN 0.0671  0.238 -0.184 -0.113  0.357  1.7498
```

```
library(quadprog)
avg.ret <- matrix(apply(mat.ret, 2, mean))
colnames(avg.ret) <- paste("Avg.Ret")
rownames(avg.ret) <-
paste(c("JPM", "GS", "AES", "DTE", "AAPL", "AMZN"))
avg.ret
```

```
##      Avg.Ret
## JPM   0.0958
## GS    0.0773
## AES   0.1305
## DTE   0.1472
## AAPL  0.0983
## AMZN  0.3733
```

```
#set the smaller of the average returns as minimum return min.ret and the larger of the average returns as the max return max.ret.  
min.ret <- min(avg.ret)  
min.ret
```

```
## [1] 0.0773
```

```
max.ret <- max(avg.ret)  
max.ret
```

```
## [1] 0.373
```

Create a sequence that begins with min.ret and ends with max.ret with 100 increments in between.

```
increments = 100  
tgt.ret <- seq(min.ret,max.ret,length=increments)  
head(tgt.ret)
```

```
## [1] 0.0773 0.0803 0.0833 0.0863 0.0893 0.0923
```

```
tail(tgt.ret)
```

```
## [1] 0.358 0.361 0.364 0.367 0.370 0.373
```

```
#Construct Dummy Portfolio Standard Deviation Vector
tgt.sd <- rep(0,length=increments)
tgt.sd
```

```
wgt <- matrix(0,nrow=increments,ncol=length(avg.ret))
```

head(wgt)

```
##      [,1] [,2] [,3] [,4] [,5] [,6]
## [1,]     0     0     0     0     0     0
## [2,]     0     0     0     0     0     0
## [3,]     0     0     0     0     0     0
## [4,]     0     0     0     0     0     0
## [5,]     0     0     0     0     0     0
## [6,]     0     0     0     0     0     0
```

```
tail(wgt)
```

```
##      [,1] [,2] [,3] [,4] [,5] [,6]
## [95,]     0     0     0     0     0     0
## [96,]     0     0     0     0     0     0
## [97,]     0     0     0     0     0     0
## [98,]     0     0     0     0     0     0
## [99,]     0     0     0     0     0     0
## [100,]    0     0     0     0     0     0
```

#Run the quadprog Optimizer

```
for (i in 1:increments) {
  Dmat <- 2*VCOV
  dvec <- c(rep(0,length(avg.ret)))
  Amat <- cbind(rep(1,length(avg.ret)),avg.ret,diag(1,nrow=ncol(returns)))
  bvec <- c(1,tgt.ret[i],rep(0,ncol(returns)))
  soln <- solve.QP(Dmat,dvec,Amat,bvec=bvec)
  tgt.sd[i] <- sqrt(soln$value)
  wgt[i,] <- soln$solution}

head(tgt.sd)
```

```
## [1] 0.457 0.457 0.457 0.457 0.457 0.457
```

```
tail(tgt.sd)
```

```
## [1] 0.880 0.888 0.895 0.902 0.910 0.917
```

```
options(scipen=100)
head(wgt)
```

```

##      [,1]  [,2]  [,3]  [,4]  [,5]  [,6]
## [1,]    0 0.512 0.0207 0.27 0.16 0.0368
## [2,]    0 0.512 0.0207 0.27 0.16 0.0368
## [3,]    0 0.512 0.0207 0.27 0.16 0.0368
## [4,]    0 0.512 0.0207 0.27 0.16 0.0368
## [5,]    0 0.512 0.0207 0.27 0.16 0.0368
## [6,]    0 0.512 0.0207 0.27 0.16 0.0368

```

```

# Overwrite the first entries, thaty are not zero due to a calculation error.Also ren
ame the column headers.
colnames(wgt) <-
paste(c("wgt.JPM","wgt.GS","wgt.AES","wgt.DTE","wgtAAPL","wgt.AMZN"))

```

```

wgt[1,1] <- 0
wgt[nrow(wgt),2] <- 0
head(wgt)

```

```

##      wgt.JPM wgt.GS wgt.AES wgt.DTE wgtAAPL wgt.AMZN
## [1,]    0 0.512 0.0207 0.27 0.16 0.0368
## [2,]    0 0.512 0.0207 0.27 0.16 0.0368
## [3,]    0 0.512 0.0207 0.27 0.16 0.0368
## [4,]    0 0.512 0.0207 0.27 0.16 0.0368
## [5,]    0 0.512 0.0207 0.27 0.16 0.0368
## [6,]    0 0.512 0.0207 0.27 0.16 0.0368

```

```

# Combine Portfolio Returns, Portfolio Standard Deviations, and PortfolioWeights
tgt.port <- data.frame(cbind(tgt.ret,tgt.sd,wgt))
head(tgt.port)

```

```

##   tgt.ret tgt.sd wgt.JPM wgt.GS wgt.AES wgt.DTE wgtAAPL wgt.AMZN
## 1  0.0773  0.457      0 0.512 0.0207 0.27 0.16 0.0368
## 2  0.0803  0.457      0 0.512 0.0207 0.27 0.16 0.0368
## 3  0.0833  0.457      0 0.512 0.0207 0.27 0.16 0.0368
## 4  0.0863  0.457      0 0.512 0.0207 0.27 0.16 0.0368
## 5  0.0893  0.457      0 0.512 0.0207 0.27 0.16 0.0368
## 6  0.0923  0.457      0 0.512 0.0207 0.27 0.16 0.0368

```

```

minvar.port <-subset(tgt.port,tgt.port$tgt.sd==min(tgt.port$tgt.sd))
head(minvar.port)

```

```

##   tgt.ret tgt.sd wgt.JPM wgt.GS wgt.AES wgt.DTE wgtAAPL wgt.AMZN
## 1  0.0773  0.457      0  0.512  0.0207  0.27    0.16  0.0368
## 2  0.0803  0.457      0  0.512  0.0207  0.27    0.16  0.0368
## 3  0.0833  0.457      0  0.512  0.0207  0.27    0.16  0.0368
## 4  0.0863  0.457      0  0.512  0.0207  0.27    0.16  0.0368
## 5  0.0893  0.457      0  0.512  0.0207  0.27    0.16  0.0368
## 6  0.0923  0.457      0  0.512  0.0207  0.27    0.16  0.0368

```

```

#3-month treasury as of end of Dec-31-2020 was 0.09%
riskfree = .0009/12
tgt.port$Sharpe <- (tgt.port$tgt.ret-riskfree)/tgt.port$tgt.sd
head(tgt.port)

```

```

##   tgt.ret tgt.sd wgt.JPM wgt.GS wgt.AES wgt.DTE wgtAAPL wgt.AMZN Sharpe
## 1  0.0773  0.457      0  0.512  0.0207  0.27    0.16  0.0368  0.169
## 2  0.0803  0.457      0  0.512  0.0207  0.27    0.16  0.0368  0.175
## 3  0.0833  0.457      0  0.512  0.0207  0.27    0.16  0.0368  0.182
## 4  0.0863  0.457      0  0.512  0.0207  0.27    0.16  0.0368  0.189
## 5  0.0893  0.457      0  0.512  0.0207  0.27    0.16  0.0368  0.195
## 6  0.0923  0.457      0  0.512  0.0207  0.27    0.16  0.0368  0.202

```

Identify the portfolio with the highest Sharpe Ratio and that is the tangency portfolio.

```

tangency.port <-subset(tgt.port,tgt.port$Sharpe==max(tgt.port$Sharpe))
tangency.port

```

```

##   tgt.ret tgt.sd           wgt.JPM wgt.GS wgt.AES wgt.DTE wgtAAPL
## 100 0.373  0.917 -0.000000000000000787      0  0.329  0.806      0
##   wgt.AMZN Sharpe
## 100 0.567  0.407

```

Plot the Mean-Variance (MV) Efficient Frontier

```

eff.frontier <-subset(tgt.port,tgt.port$tgt.ret>=minvar.port$tgt.ret)
eff.frontier[c(1:3,nrow(eff.frontier)),]

```

```

##      tgt.ret tgt.sd          wgt.JPM wgt.GS wgt.AES wgt.DTE wgt.AAPL
## 1    0.0773  0.457  0.00000000000000000000  0.512  0.0207  0.270   0.16
## 2    0.0803  0.457  0.00000000000000000000  0.512  0.0207  0.270   0.16
## 3    0.0833  0.457  0.00000000000000000000  0.512  0.0207  0.270   0.16
## 100  0.3733  0.917 -0.0000000000000000787  0.000  0.3285  0.806   0.00
##      wgt.AMZM Sharpe
## 1    0.0368  0.169
## 2    0.0368  0.175
## 3    0.0368  0.182
## 100  0.5674  0.407

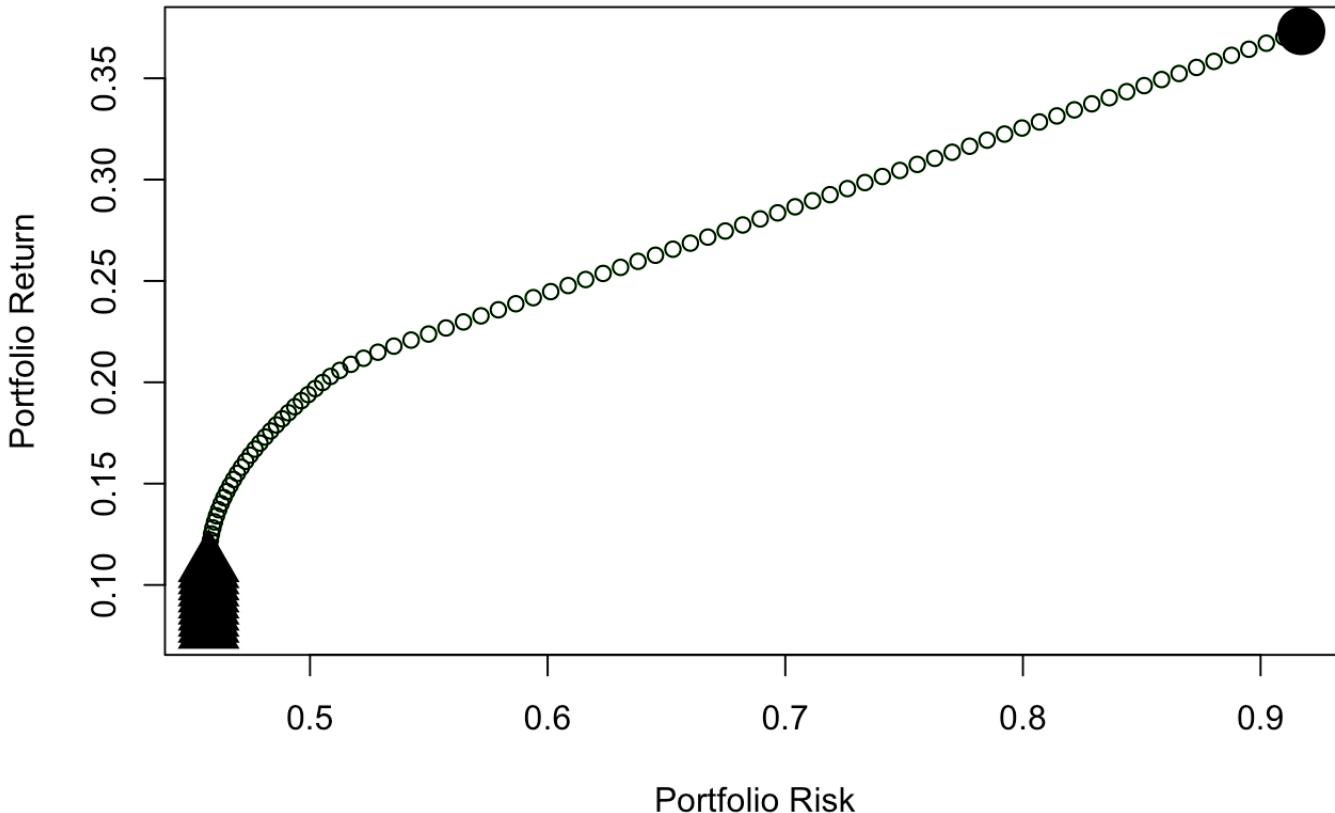
```

```

plot(x=tgt.sd,
      y=tgt.ret,
      col="green",
      xlab="Portfolio Risk",
      ylab="Portfolio Return",
      main="Mean-Variance(MV) Efficient Frontier of Portfolio- Six
            Securities Based on the Quadratic Programming Approach")
abline(h=0,lty=1)
points(x=minvar.port$tgt.sd,y=minvar.port$tgt.ret,pch=17,cex=3)
points(x=tangency.port$tgt.sd,y=tangency.port$tgt.ret,pch=19,cex=3)
points(x=eff.frontier$tgt.sd,y=eff.frontier$tgt.ret)

```

Mean-Variance(MV) Efficient Frontier of Portfolio- Six Securities Based on the Quadratic Programming Approach



Diversification Benefits

```

library(FRAPO)
library(lattice)

Idx <- interpNA(returns, method = "before")
R <- returnseries(Idx, method = "discrete", trim = TRUE)
V <- cov(R)
head(Idx)

```

	JPM.Ret	GS.Ret	AES.Ret	DTE.Ret	AAPL.Ret	AMZN.Ret
## Aug 2019	-0.2548	-0.2318	-0.580	-0.0363	-0.695	-0.3158
## Sep 2019	-0.0408	0.1732	-0.303	-0.0243	0.229	-0.1354
## Oct 2019	0.1880	0.0455	0.499	0.9824	0.339	0.0516
## Nov 2019	-0.5071	-0.5894	-0.558	-0.6315	-0.665	-0.3084
## Dec 2019	0.2608	0.8785	1.565	0.2263	1.162	0.3032
## Jan 2020	0.7753	1.4066	-0.397	0.4736	0.980	5.2108

The allocations according to the four portfolio optimizations are then extracted by means of the `Weights()` method and assigned to the objects `GMVw`, `MDPw`, `MTDw`, and `ERCw` for the global-minimum variance, most-diversified, minimum tail-dependent, and equal-risk contributed solutions, respectively.

1.The global-minimum variance portfolio.

```
GMVw <- Weights(PGMV(R))
```

```
## Iteration: 0
## pobj: 18561.8
## dobj: 18560.7
## pinf: 2.61181
## dinf: 3.9396
## dgap: 10.308
##
## Iteration: 1
## pobj: 18561.8
## dobj: 18561.1
## pinf: 0.284794
## dinf: 0.429577
## dgap: 1.70433
##
## Iteration: 2
## pobj: 18561.8
## dobj: 18561.4
## pinf: 0.168441
## dinf: 0.254072
## dgap: 1.07867
##
## Iteration: 3
## pobj: 18561.8
## dobj: 18561.7
## pinf: 0.162616
## dinf: 0.245286
## dgap: 1.06163
##
## Iteration: 4
## pobj: 18561.8
## dobj: 18562.4
## pinf: 0.16231
## dinf: 0.244824
## dgap: 1.06037
##
## Iteration: 5
## pobj: 18561.8
## dobj: 18564.2
## pinf: 0.162256
## dinf: 0.244743
## dgap: 1.06021
##
## Iteration: 6
## pobj: 21236.5
## dobj: 22170.7
```

```
## pinf: 0.0302418
## dinf: 0.0456161
## dgap: 236.744
##
## Iteration: 7
## pobj: 21440.7
## dobj: 22201.8
## pinf: 0.0235934
## dinf: 0.0355878
## dgap: 201.284
##
## Iteration: 8
## pobj: 21457.8
## dobj: 22259.9
## pinf: 0.0230797
## dinf: 0.0348129
## dgap: 200.216
##
## Iteration: 9
## pobj: 28747.4
## dobj: 25460
## pinf: 0.000465606
## dinf: 0.00070231
## dgap: 3505.35
##
## Iteration: 10
## pobj: 26485.5
## dobj: 25937.3
## pinf: 4.74065e-14
## dinf: 1.10824e-10
## dgap: 548.181
##
## Iteration: 11
## pobj: 26024.6
## dobj: 25969.9
## pinf: 9.25926e-14
## dinf: 1.57571e-10
## dgap: 54.6511
##
## Iteration: 12
## pobj: 25974.3
## dobj: 25971.2
## pinf: 1.803e-13
## dinf: 2.54138e-10
## dgap: 3.12895
##
## Iteration: 13
## pobj: 25974.3
## dobj: 25977
## pinf: 5.50124e-05
```

```
## dinf: 1.21332e-09
## dgap: 0.157802
##
## Iteration: 14
## pobj: 25974.3
## dobj: 25977.2
## pinf: 5.77897e-05
## dinf: 4.28858e-09
## dgap: 0.00789355
##
## Iteration: 15
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.79287e-05
## dinf: 1.47176e-09
## dgap: 0.000394686
##
## Iteration: 16
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.79356e-05
## dinf: 6.89337e-10
## dgap: 1.97343e-05
##
## Iteration: 17
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 6.16699e-10
## dgap: 9.86716e-07
##
## Iteration: 18
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 7.55579e-10
## dgap: 4.93358e-08
##
## Iteration: 19
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 1.0933e-08
## dgap: 2.46679e-09
##
## Iteration: 20
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.23639e-09
```

```
## dgap: 1.2334e-10
##
## Iteration: 21
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37227e-09
## dgap: 6.16698e-12
##
## Iteration: 22
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37694e-09
## dgap: 3.08349e-13
##
## Iteration: 23
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.40241e-09
## dgap: 1.54174e-14
##
## Iteration: 24
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37258e-09
## dgap: 7.70872e-16
##
## Iteration: 25
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.39268e-09
## dgap: 3.85436e-17
##
## Iteration: 26
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.3848e-09
## dgap: 1.92718e-18
##
## Iteration: 27
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38132e-09
## dgap: 9.6359e-20
```

```
##  
## Iteration: 28  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.40155e-09  
## dgap: 4.81795e-21  
##  
## Iteration: 29  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.3753e-09  
## dgap: 2.40898e-22  
##  
## Iteration: 30  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.37726e-09  
## dgap: 1.20449e-23  
##  
## Iteration: 31  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.40933e-09  
## dgap: 6.02244e-25  
##  
## Iteration: 32  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.37646e-09  
## dgap: 3.01122e-26  
##  
## Iteration: 33  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.37629e-09  
## dgap: 1.50561e-27  
##  
## Iteration: 34  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.3848e-09  
## dgap: 7.52805e-29  
##
```

```
## Iteration: 35
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37493e-09
## dgap: 3.76402e-30
##
## Iteration: 36
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37258e-09
## dgap: 1.88201e-31
##
## Iteration: 37
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37319e-09
## dgap: 9.41006e-33
##
## Iteration: 38
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38325e-09
## dgap: 4.70503e-34
##
## Iteration: 39
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.41022e-09
## dgap: 2.35251e-35
##
## Iteration: 40
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37551e-09
## dgap: 1.17626e-36
##
## Iteration: 41
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38854e-09
## dgap: 5.88129e-38
##
## Iteration: 42
```

```
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37513e-09
## dgap: 2.94064e-39
##
## Iteration: 43
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37726e-09
## dgap: 1.47032e-40
##
## Iteration: 44
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.40856e-09
## dgap: 7.35161e-42
##
## Iteration: 45
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.40215e-09
## dgap: 3.6758e-43
##
## Iteration: 46
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37609e-09
## dgap: 1.8379e-44
##
## Iteration: 47
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37258e-09
## dgap: 9.18951e-46
##
## Iteration: 48
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38035e-09
## dgap: 4.59476e-47
##
## Iteration: 49
## pobj: 25974.3
```

```
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37513e-09
## dgap: 2.29738e-48
##
## Iteration: 50
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37222e-09
## dgap: 1.14869e-49
##
## Iteration: 51
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38226e-09
## dgap: 5.74344e-51
##
## Iteration: 52
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.3753e-09
## dgap: 2.87172e-52
##
## Iteration: 53
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37377e-09
## dgap: 1.43586e-53
##
## Iteration: 54
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.3728e-09
## dgap: 7.17931e-55
##
## Iteration: 55
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37222e-09
## dgap: 3.58965e-56
##
## Iteration: 56
## pobj: 25974.3
## dobj: 25977.3
```

```
## pinf: 5.7936e-05
## dinf: 4.3846e-09
## dgap: 1.79483e-57
##
## Iteration: 57
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38151e-09
## dgap: 8.97413e-59
##
## Iteration: 58
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37609e-09
## dgap: 4.48707e-60
##
## Iteration: 59
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37297e-09
## dgap: 2.24353e-61
##
## Iteration: 60
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37803e-09
## dgap: 1.12177e-62
##
## Iteration: 61
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37462e-09
## dgap: 5.60883e-64
##
## Iteration: 62
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.40215e-09
## dgap: 2.80442e-65
##
## Iteration: 63
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
```

```
## dinf: 4.38274e-09
## dgap: 1.40221e-66
##
## Iteration: 64
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37667e-09
## dgap: 7.01104e-68
##
## Iteration: 65
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38429e-09
## dgap: 3.50552e-69
##
## Iteration: 66
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.375e-09
## dgap: 1.75276e-70
##
## Iteration: 67
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.40155e-09
## dgap: 8.7638e-72
##
## Iteration: 68
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.3811e-09
## dgap: 4.3819e-73
##
## Iteration: 69
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37568e-09
## dgap: 2.19095e-74
##
## Iteration: 70
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37455e-09
```

```
## dgap: 1.09548e-75
##
## Iteration: 71
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38074e-09
## dgap: 5.47738e-77
##
## Iteration: 72
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.375e-09
## dgap: 2.73869e-78
##
## Iteration: 73
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37413e-09
## dgap: 1.36934e-79
##
## Iteration: 74
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37513e-09
## dgap: 6.84672e-81
##
## Iteration: 75
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37687e-09
## dgap: 3.42336e-82
##
## Iteration: 76
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.41998e-09
## dgap: 1.71168e-83
##
## Iteration: 77
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37268e-09
## dgap: 8.5584e-85
```

```
##  
## Iteration: 78  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.39432e-09  
## dgap: 4.2792e-86  
##  
## Iteration: 79  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.38158e-09  
## dgap: 2.1396e-87  
##  
## Iteration: 80  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.37646e-09  
## dgap: 1.0698e-88  
##  
## Iteration: 81  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.375e-09  
## dgap: 5.349e-90  
##  
## Iteration: 82  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.3839e-09  
## dgap: 2.6745e-91  
##  
## Iteration: 83  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.40446e-09  
## dgap: 1.33725e-92  
##  
## Iteration: 84  
## pobj: 25974.3  
## dobj: 25977.3  
## pinf: 5.7936e-05  
## dinf: 4.38545e-09  
## dgap: 6.68625e-94  
##
```

```
## Iteration: 85
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.3728e-09
## dgap: 3.34312e-95
##
## Iteration: 86
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.40446e-09
## dgap: 1.67156e-96
##
## Iteration: 87
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.43569e-09
## dgap: 8.35781e-98
##
## Iteration: 88
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38267e-09
## dgap: 4.17891e-99
##
## Iteration: 89
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38267e-09
## dgap: 2.08945e-100
##
## Iteration: 90
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37413e-09
## dgap: 1.04473e-101
##
## Iteration: 91
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38093e-09
## dgap: 5.22363e-103
##
## Iteration: 92
```

```
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37261e-09
## dgap: 2.61182e-104
##
## Iteration: 93
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.39136e-09
## dgap: 1.30591e-105
##
## Iteration: 94
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37222e-09
## dgap: 6.52954e-107
##
## Iteration: 95
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38883e-09
## dgap: 3.26477e-108
##
## Iteration: 96
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38969e-09
## dgap: 1.63238e-109
##
## Iteration: 97
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.38286e-09
## dgap: 8.16192e-111
##
## Iteration: 98
## pobj: 25974.3
## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37229e-09
## dgap: 4.08096e-112
##
## Iteration: 99
## pobj: 25974.3
```

```

## dobj: 25977.3
## pinf: 5.7936e-05
## dinf: 4.37375e-09
## dgap: 2.04048e-113
##
## Optimal solution not determined in 100 iteration(s).

```

2.The most diversified Portfolio,

```
MDPw <- Weights(PMD(R))
```

```

## Iteration: 0
## pobj: 0.0968723
## dobj: -0.947098
## pinf: 0
## dinf: 2.98757
## dgap: 1.04397
##
## Iteration: 1
## pobj: 0.0957649
## dobj: 0.00910916
## pinf: 5.00371e-17
## dinf: 0.247451
## dgap: 0.0866557
##
## Iteration: 2
## pobj: 0.0927775
## dobj: 0.0761668
## pinf: 7.07631e-17
## dinf: 0.0410278
## dgap: 0.0166106
##
## Iteration: 3
## pobj: 0.0915276
## dobj: 0.0883556
## pinf: 6.93889e-17
## dinf: 0.00537082
## dgap: 0.003172
##
## Iteration: 4
## pobj: 0.0911306
## dobj: 0.0903417
## pinf: 3.46945e-17
## dinf: 0.000702537
## dgap: 0.000788922
##
## Iteration: 5
## pobj: 0.091059
## dobj: 0.0909149

```

```

## pinf: 7.88107e-17
## dinf: 4.60475e-05
## dgap: 0.000144078
##
## Iteration: 6
## pobj: 0.0910548
## dobj: 0.09104
## pinf: 6.86915e-17
## dinf: 2.58324e-06
## dgap: 1.4771e-05
##
## Iteration: 7
## pobj: 0.0910547
## dobj: 0.0910539
## pinf: 6.3596e-17
## dinf: 1.32458e-07
## dgap: 8.54163e-07
##
## Optimal solution found.

```

3.The equal-risk contributed Portfolio

```
ERCw <- Weights(PERC(V))
```

```

## Iteration: 0
## pobj: 0
## dobj: 3.10768e+06
## pinf: 1
## dinf: 1
## dgap: 7
##
## Iteration: 1
## pobj: -2.95229e+06
## dobj: 7774.88
## pinf: 0.952496
## dinf: 0.050002
## dgap: 0.350209
##
## Iteration: 2
## pobj: -156985
## dobj: 27.6728
## pinf: 0.0505241
## dinf: 0.00252237
## dgap: 0.0182416
##
## Iteration: 3
## pobj: -8448.04
## dobj: 9.14291
## pinf: 0.00272137

```

```

## dinf: 0.000268944
## dgap: 0.00244755
##
## Iteration: 4
## pobj: -411.337
## dobj: 9.026
## pinf: 0.000135266
## dinf: 0.000102757
## dgap: 0.000479246
##
## Iteration: 5
## pobj: -127.492
## dobj: 8.98212
## pinf: 4.3915e-05
## dinf: 4.66023e-05
## dgap: 0.000166702
##
## Iteration: 6
## pobj: -5.71116
## dobj: 8.95781
## pinf: 4.72023e-06
## dinf: 1.28668e-05
## dgap: 2.5897e-05
##
## Iteration: 7
## pobj: 8.00169
## dobj: 8.95371
## pinf: 3.06343e-07
## dinf: 2.03371e-06
## dgap: 2.14103e-06
##
## Iteration: 8
## pobj: 8.89104
## dobj: 8.95358
## pinf: 2.01238e-08
## dinf: 1.69518e-07
## dgap: 1.47369e-07
##
## Optimal solution found.

```

4. Minimum tail-dependent portfolio

```
MTDw <- Weights(PMTD(R))
```

```

## Iteration: 0
## pobj: 0.350159
## dobj: -0.694728
## pinf: 0
## dinf: 3.00911

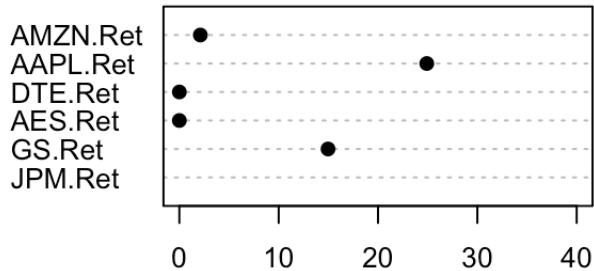
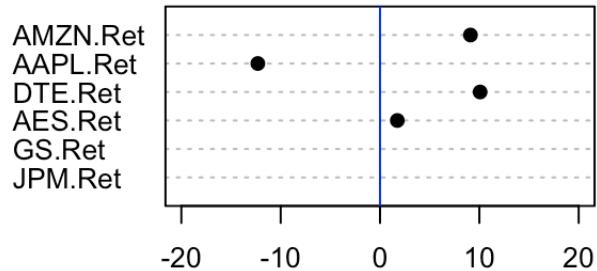
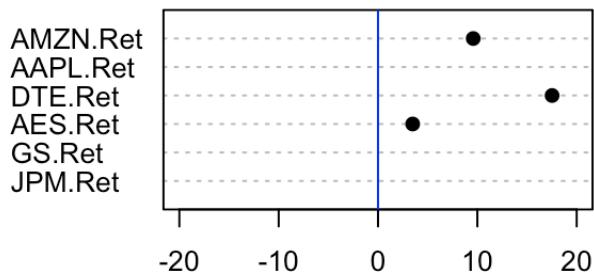
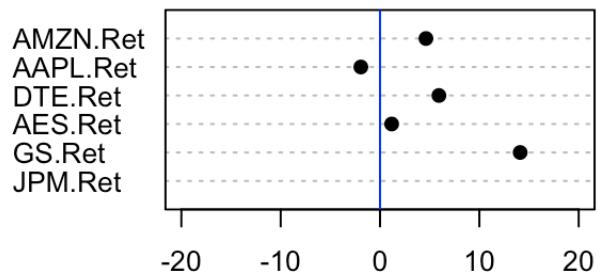
```

```
## dgap: 1.04489
##
## Iteration: 1
## pobj: 0.348754
## dobj: 0.265618
## pinf: 6.20634e-17
## dinf: 0.238911
## dgap: 0.0831359
##
## Iteration: 2
## pobj: 0.344182
## dobj: 0.331936
## pinf: 1.19381e-16
## dinf: 0.0300596
## dgap: 0.0122463
##
## Iteration: 3
## pobj: 0.341364
## dobj: 0.33861
## pinf: 2.22045e-16
## dinf: 0.0031782
## dgap: 0.0027537
##
## Iteration: 4
## pobj: 0.340376
## dobj: 0.339825
## pinf: 2.22045e-16
## dinf: 0.000100002
## dgap: 0.000551229
##
## Iteration: 5
## pobj: 0.340147
## dobj: 0.340078
## pinf: 6.66134e-16
## dinf: 2.87904e-06
## dgap: 6.85831e-05
##
## Iteration: 6
## pobj: 0.340118
## dobj: 0.340114
## pinf: 1.33227e-15
## dinf: 1.47854e-07
## dgap: 4.76785e-06
##
## Iteration: 7
## pobj: 0.340116
## dobj: 0.340116
## pinf: 2.44249e-15
## dinf: 7.41479e-09
## dgap: 2.4573e-07
```

```
##  
## Optimal solution found.
```

```
# The weights are then collected in the matrix object W. This object is then used in  
the call to the apply() function to determine the marginal risk contributions for each  
of the four optimal weight vectors.
```

```
W <- cbind(GMVw, MDPw, MTDw, ERCw)  
MRC <- apply(W, 2, mrc, Sigma = V)  
rownames(MRC) <- colnames(Idx)  
  
colnames(MRC) <- c("GMV", "MDP", "MTD", "ERC")  
oldpar <- par(no.readonly = TRUE)  
  
par(mfrow = c(2, 2))  
dotchart(GMVw, xlim = c(0, 40), main = "GMV Allocation", pch = 19)  
dotchart(MDPw - GMVw, xlim = c(-20, 20), main = "MDP vs. GMV",  
        pch = 19)  
abline(v = 0, col = "blue")  
dotchart(MTDw - GMVw, xlim = c(-20, 20), main = "MTD vs. GMV", pch = 19)  
abline(v = 0, col = "blue")  
dotchart(ERCw - GMVw, xlim = c(-20, 20), main = "ERC vs. GMV",  
        pch = 19)  
abline(v = 0, col = "blue")
```

GMV Allocation**MDP vs. GMV****MTD vs. GMV****ERC vs. GMV**

```
library(PerformanceAnalytics)
Rdec <- R / 100
Pret <- apply(W, 2, function(x) Rdec %*% x / 100)
SD <- apply(Pret, 2, sd) * 100
ES95 <- apply(Pret, 2, function(x)
  abs(ES(R = x, method = "modified") * 100))
## Summarising results
Res <- rbind(SD, ES95)
Res
```

```
##      GMVw  MDPw  MTDw  ERCw
## SD     228    436    578   335
## ES95   100    100    100   100
```