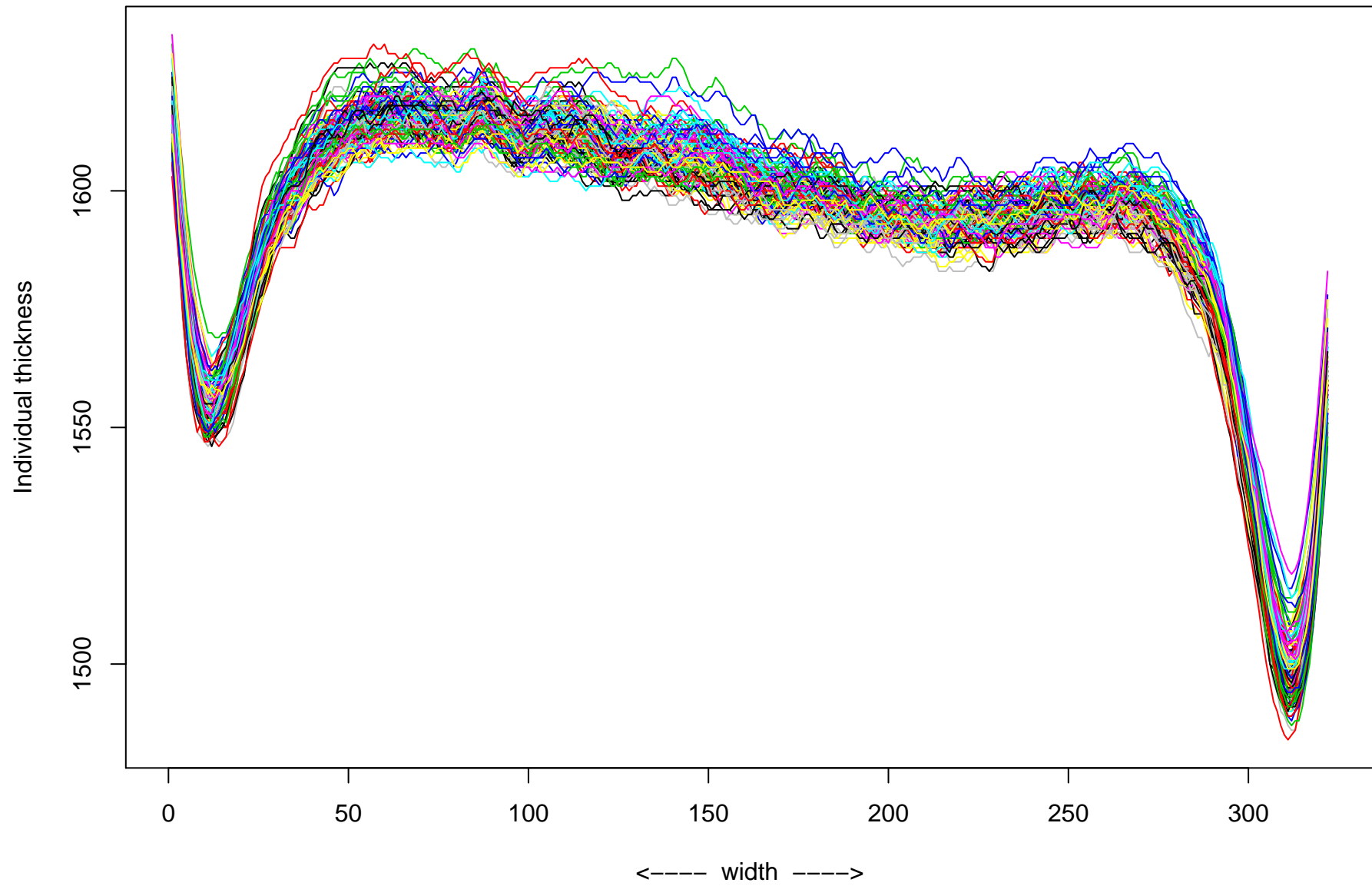**Individual thickness only**

Individual thickness

<----- width ----->

Simulated thickness

Simulated thickness
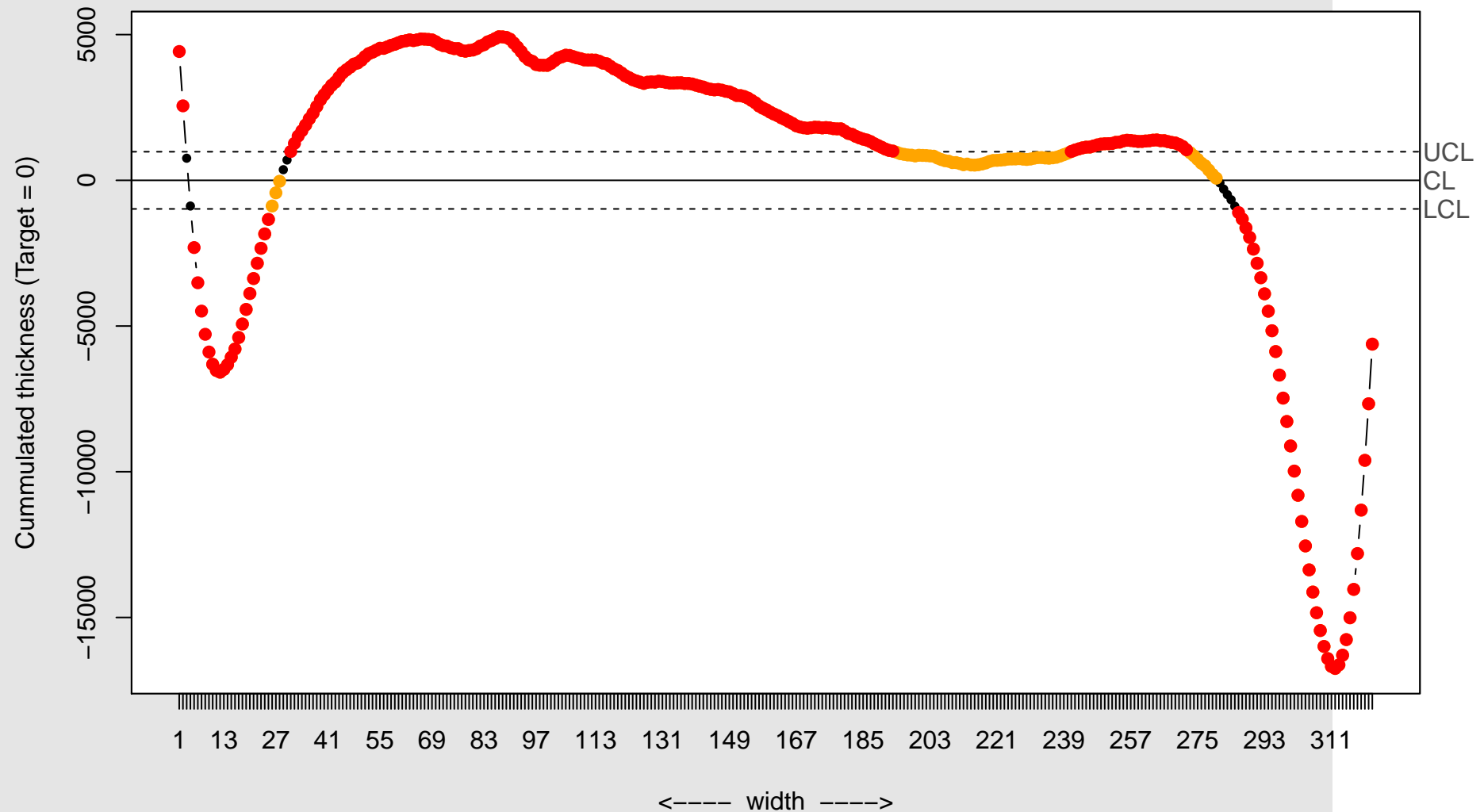
Number of groups = 322
Center = 0   **LCL = −981.2753**   **Number beyond limits = 255**
StdDev = 163.5459   **UCL = 981.2753**   **Number violating runs = 301**

Simulated thickness: Cpk is −0.0363 and z is −1.609.
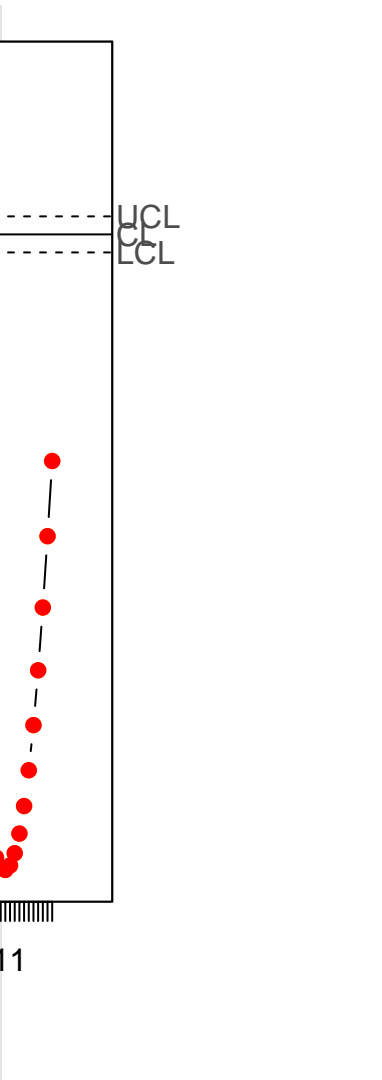
Number of groups = 322
Center = 543.8696   LCL = 53.23193   Number beyond limits = 260
StdDev = 163.5459   UCL = 1034.507   Number violating runs = 290

X−bar chart for a given dataset

Group summary statistics

UCL
CL
LCL

time comsuming −−−>
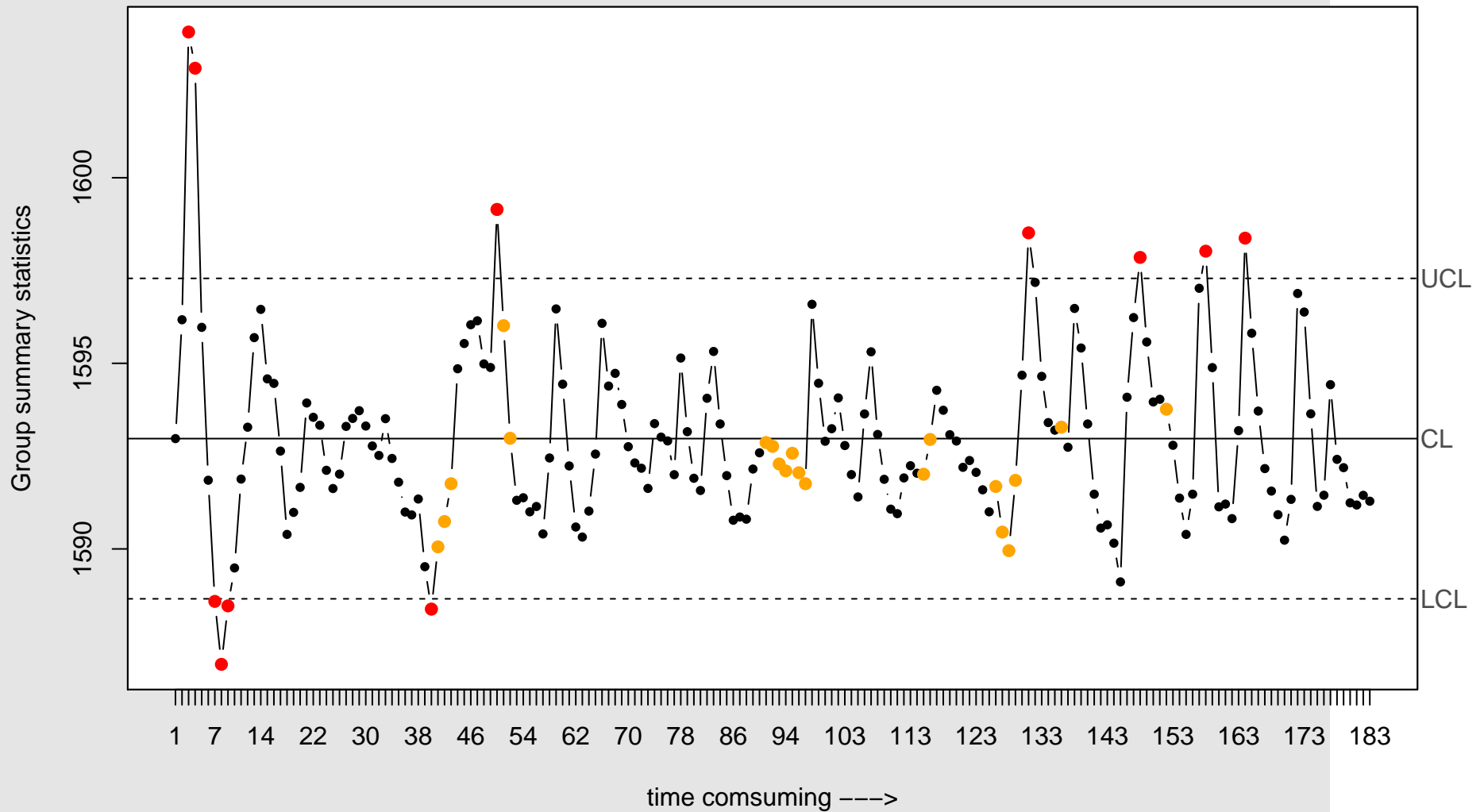
Number of groups = 183
Center = 1592.972   LCL = 1588.656   Number beyond limits = 11
StdDev = 25.81783   UCL = 1597.288   Number violating runs = 22

S chart for a given dataset

Group summary statistics

time comsuming ---->
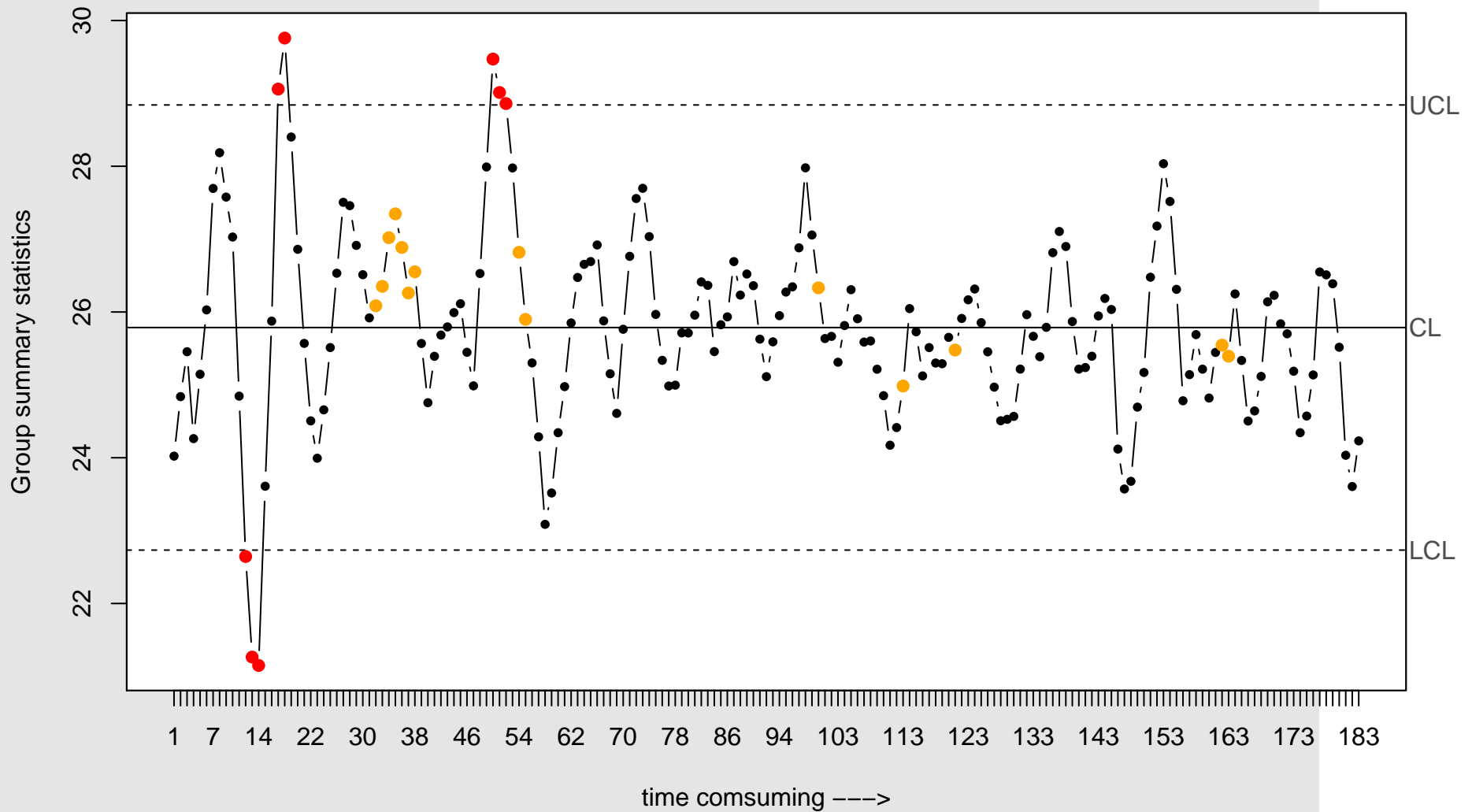
Number of groups = 183
Center = 25.78664   LCL = 22.7323   Number beyond limits = 8
StdDev = 25.80674   UCL = 28.84098   Number violating runs = 14

X−bar chart using USL/LSL for a given dataset

Group summary statistics

1750
1700
1650
1600 — CL
1550
1500
1450

USL

LSL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming −−−>
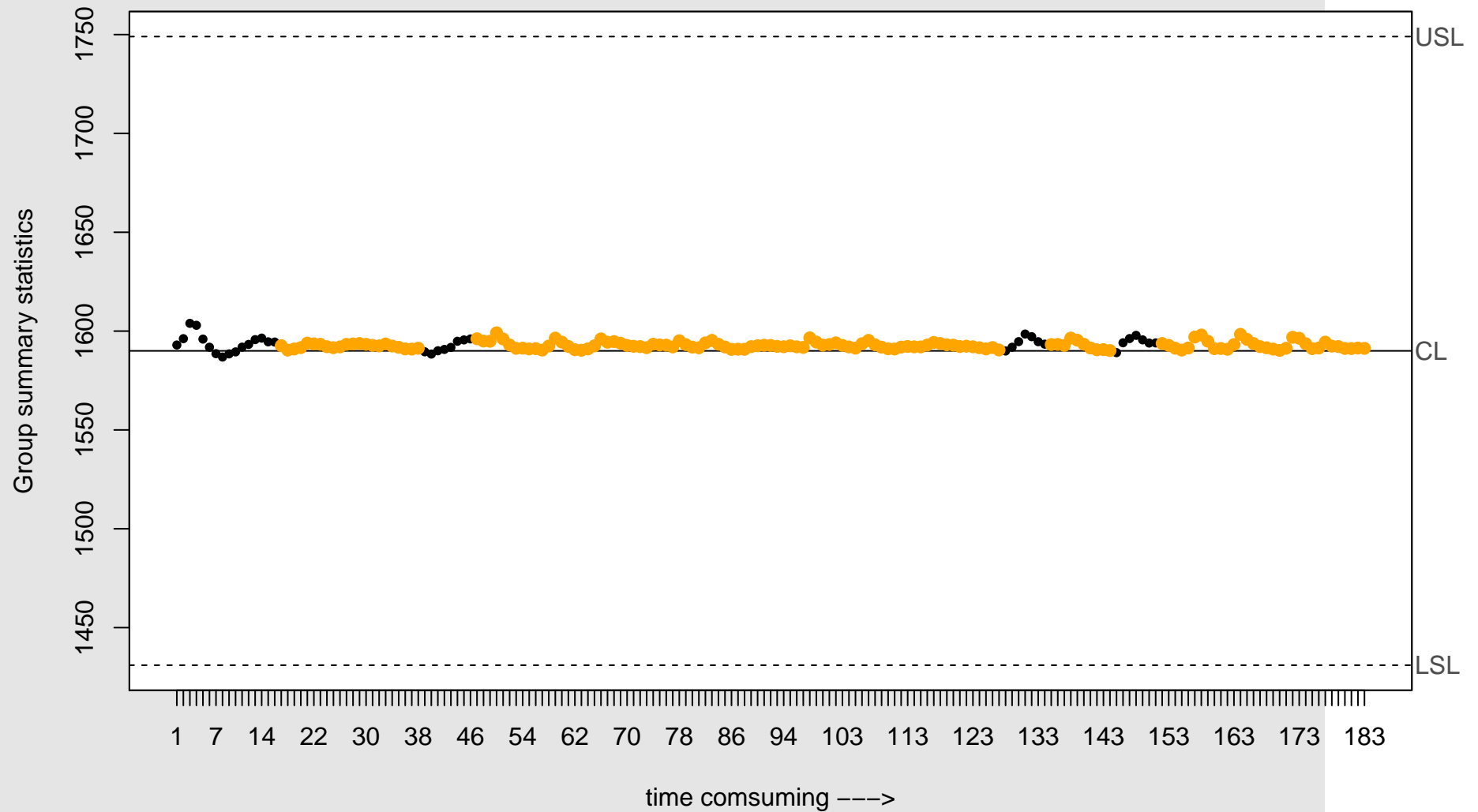
Number of groups = 183
Center = 1590   LCL = 1431   Number beyond limits = 0
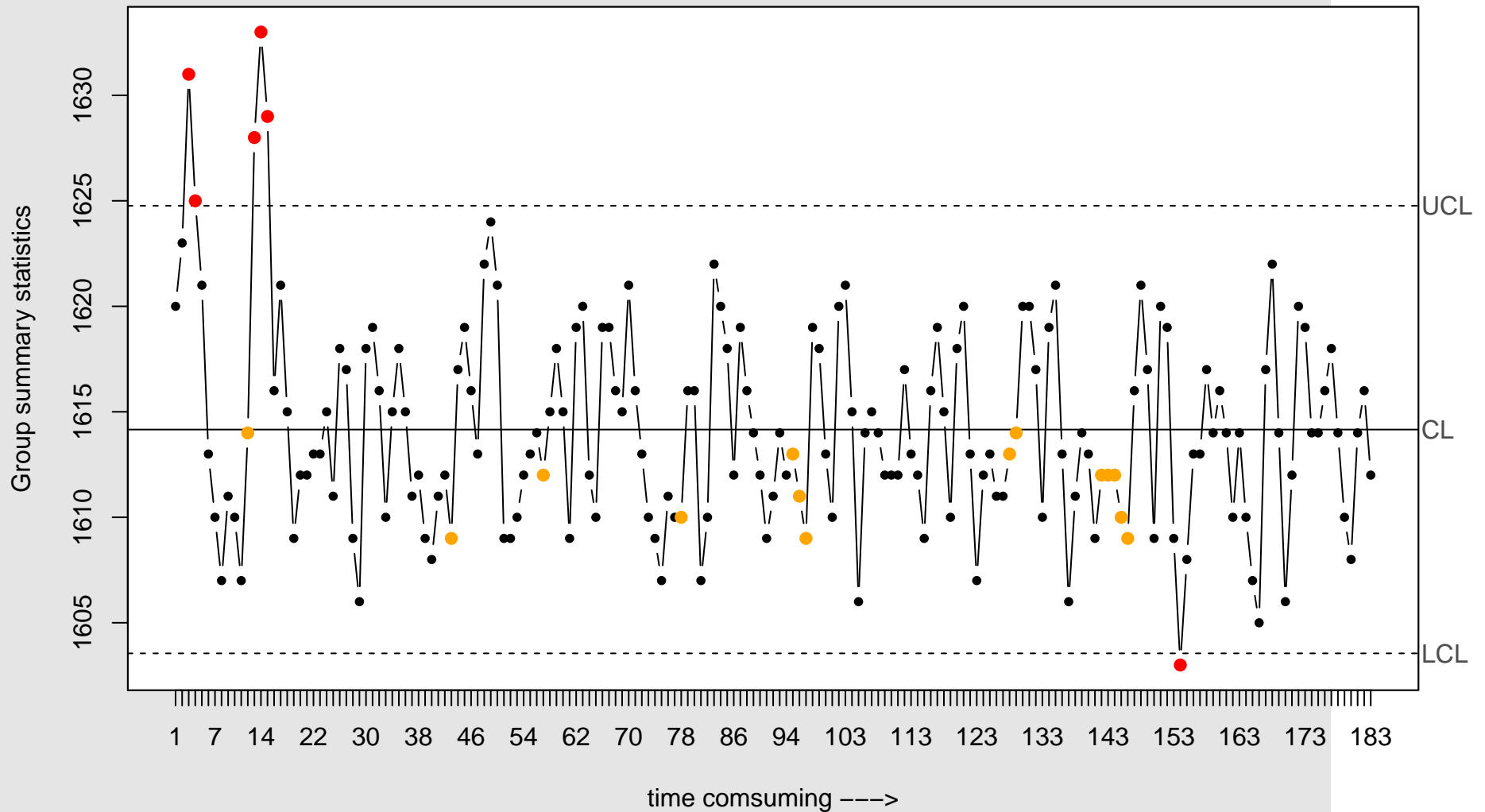StdDev = 25.81783   UCL = 1749   Number violating runs = 145

1th column point of this product

Number of groups = 183
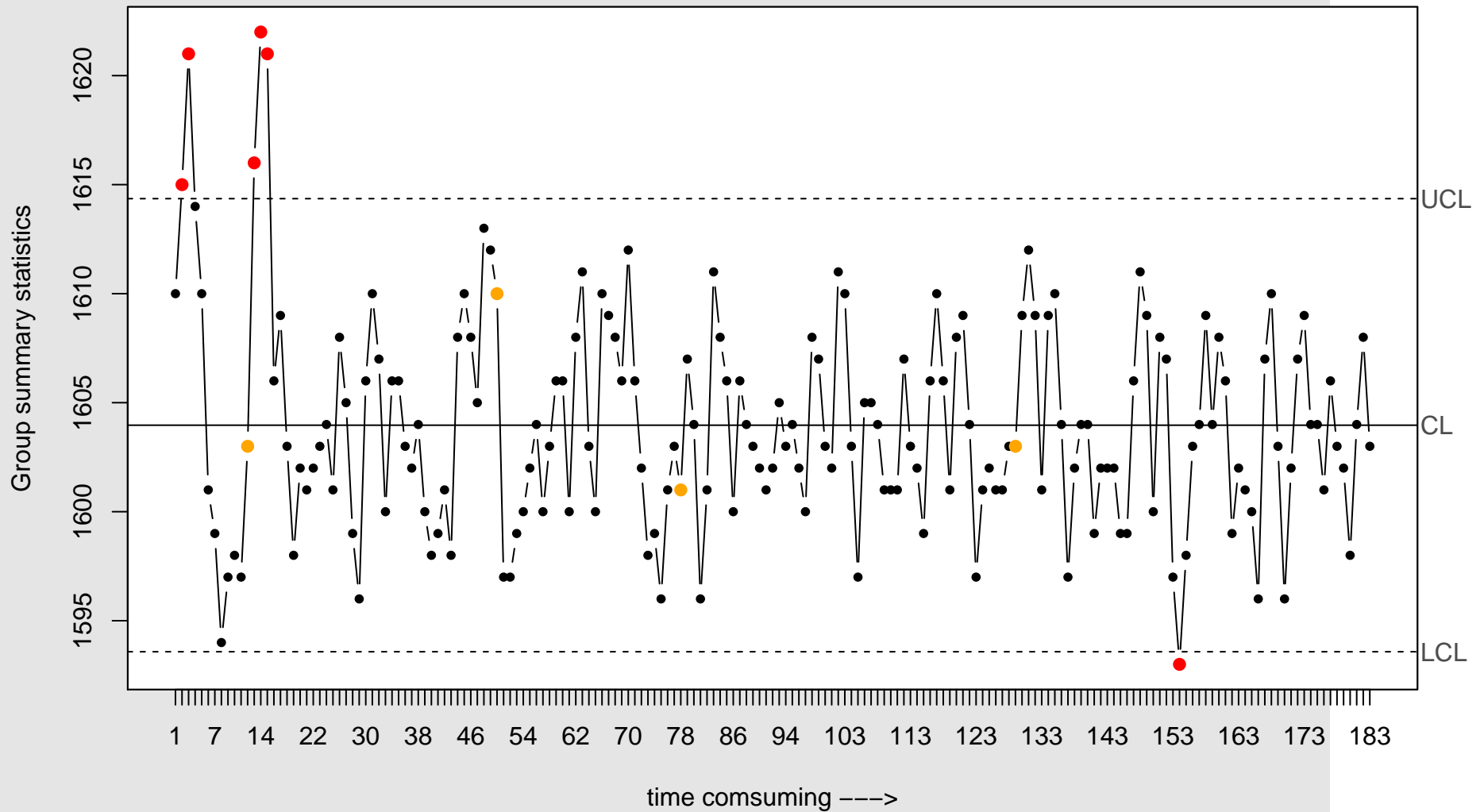Center = 1614.158   LCL = 1603.549   Number beyond limits = 6
StdDev = 3.536357   UCL = 1624.768   Number violating runs = 14

2th column point of this product

Number of groups = 183
Center = 1603.967
StdDev = 3.463292

LCL = 1593.577
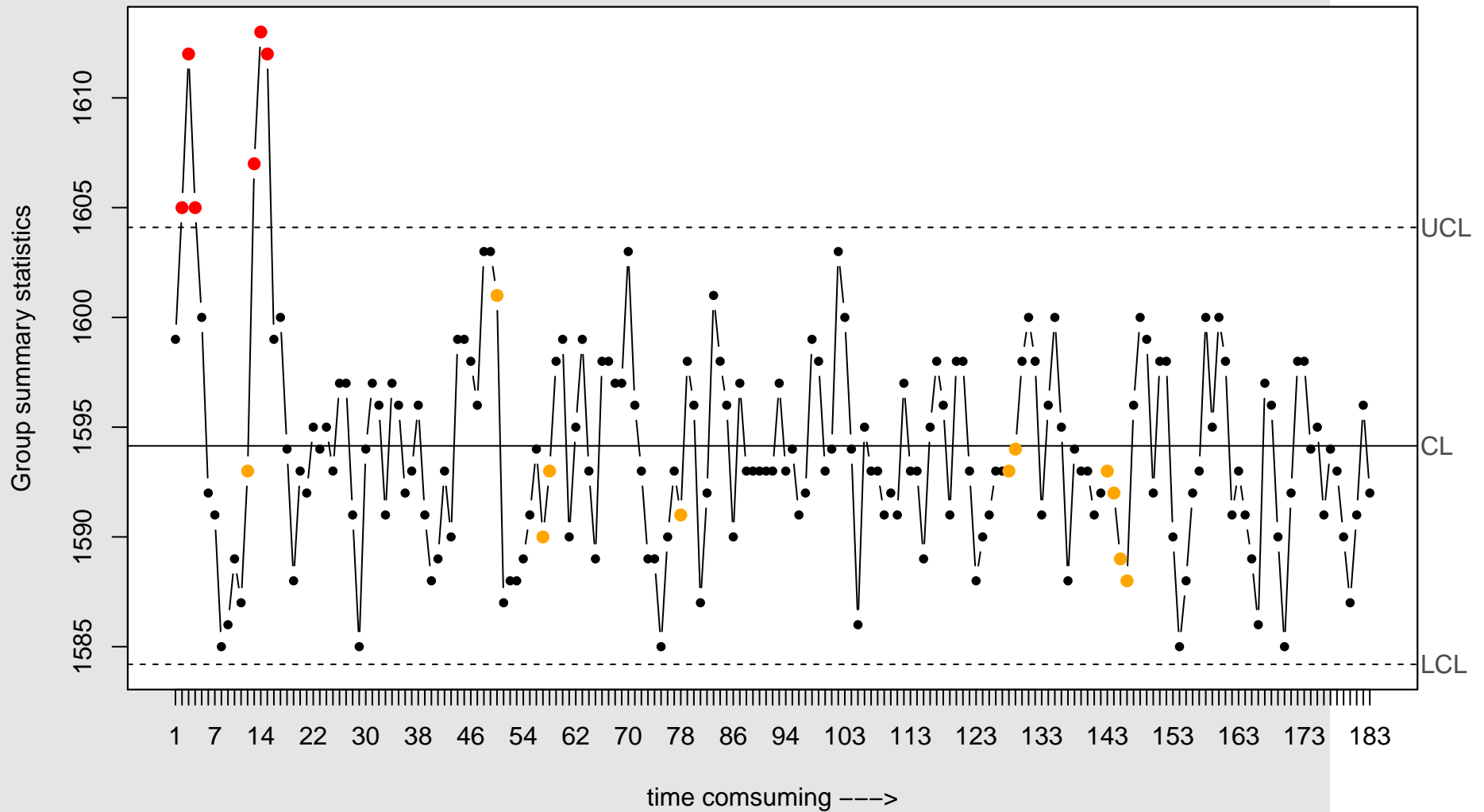UCL = 1614.357

Number beyond limits = 6
Number violating runs = 4

3th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
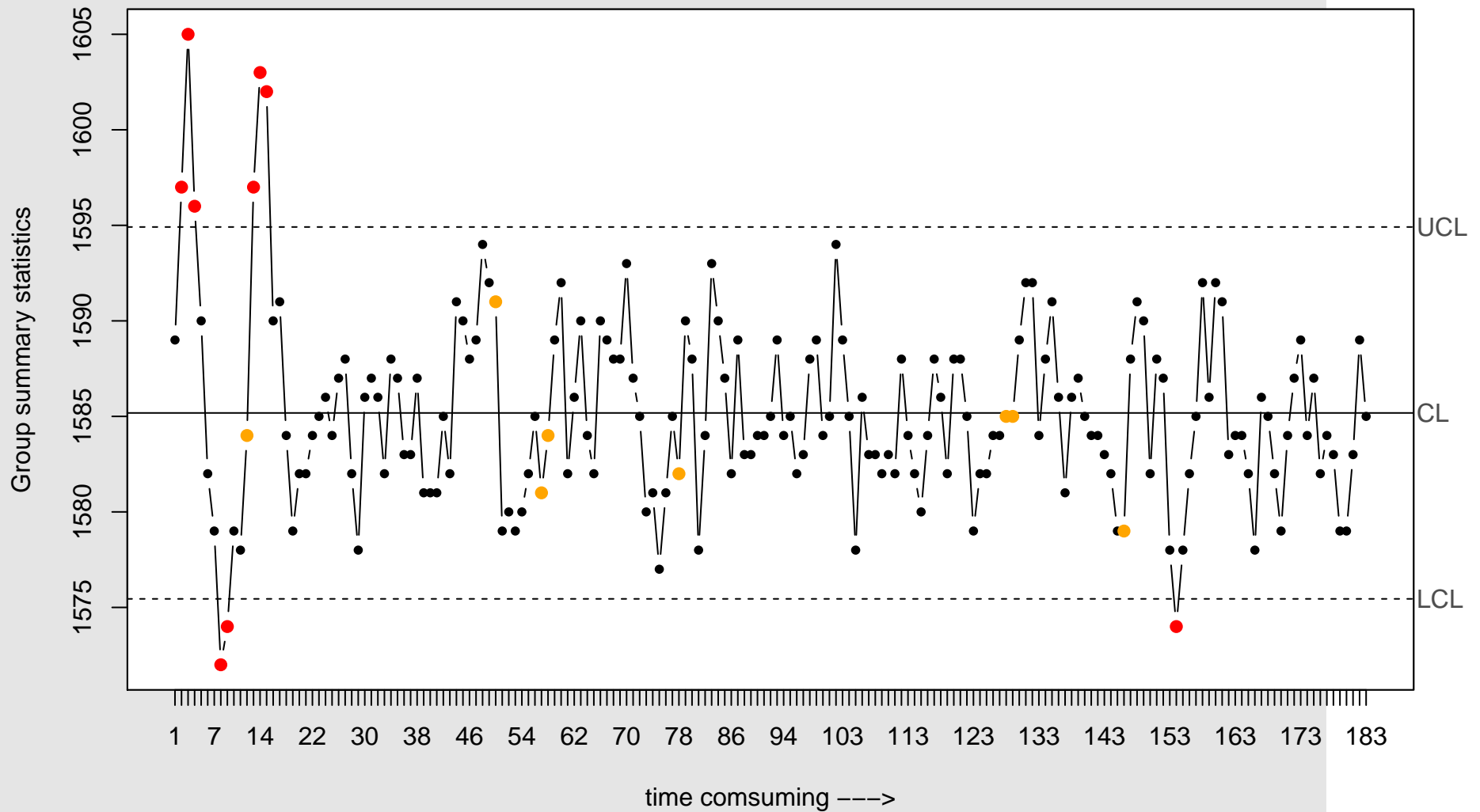Center = 1594.148
StdDev = 3.317162

LCL = 1584.196
UCL = 1604.099

Number beyond limits = 6
Number violating runs = 11

4th column point of this product

Number of groups = 183
Center = 1585.18   LCL = 1575.448   Number beyond limits = 9
StdDev = 3.244096   UCL = 1594.913   Number violating runs = 8

5th column point of this product

Number of groups = 183
Center = 1577.399
StdDev = 3.16616

LCL = 1567.9
UCL = 1586.897

Number beyond limits = 9
Number violating runs = 6

6th column point of this product

Group summary statistics

time comsuming ---->

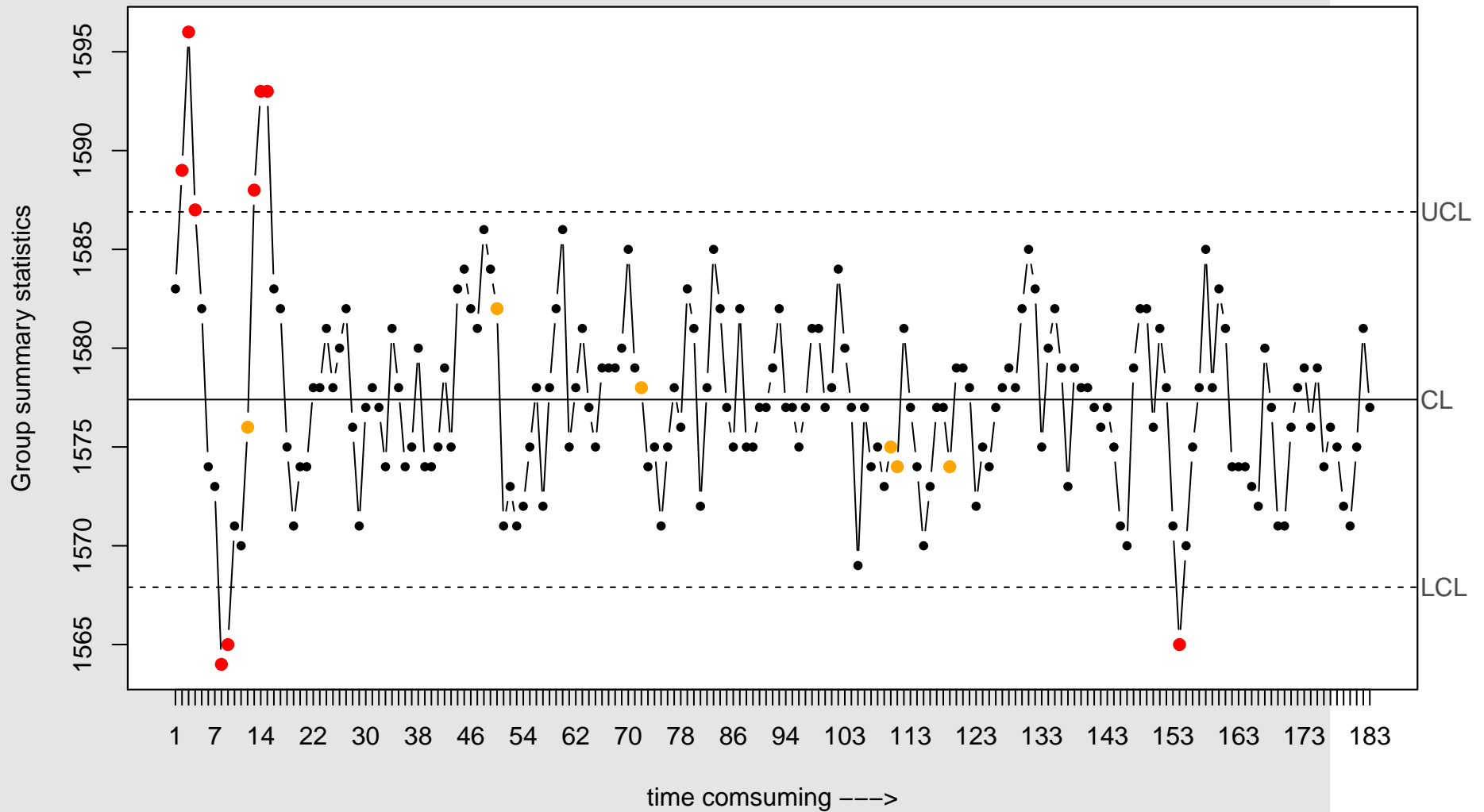Number of groups = 183
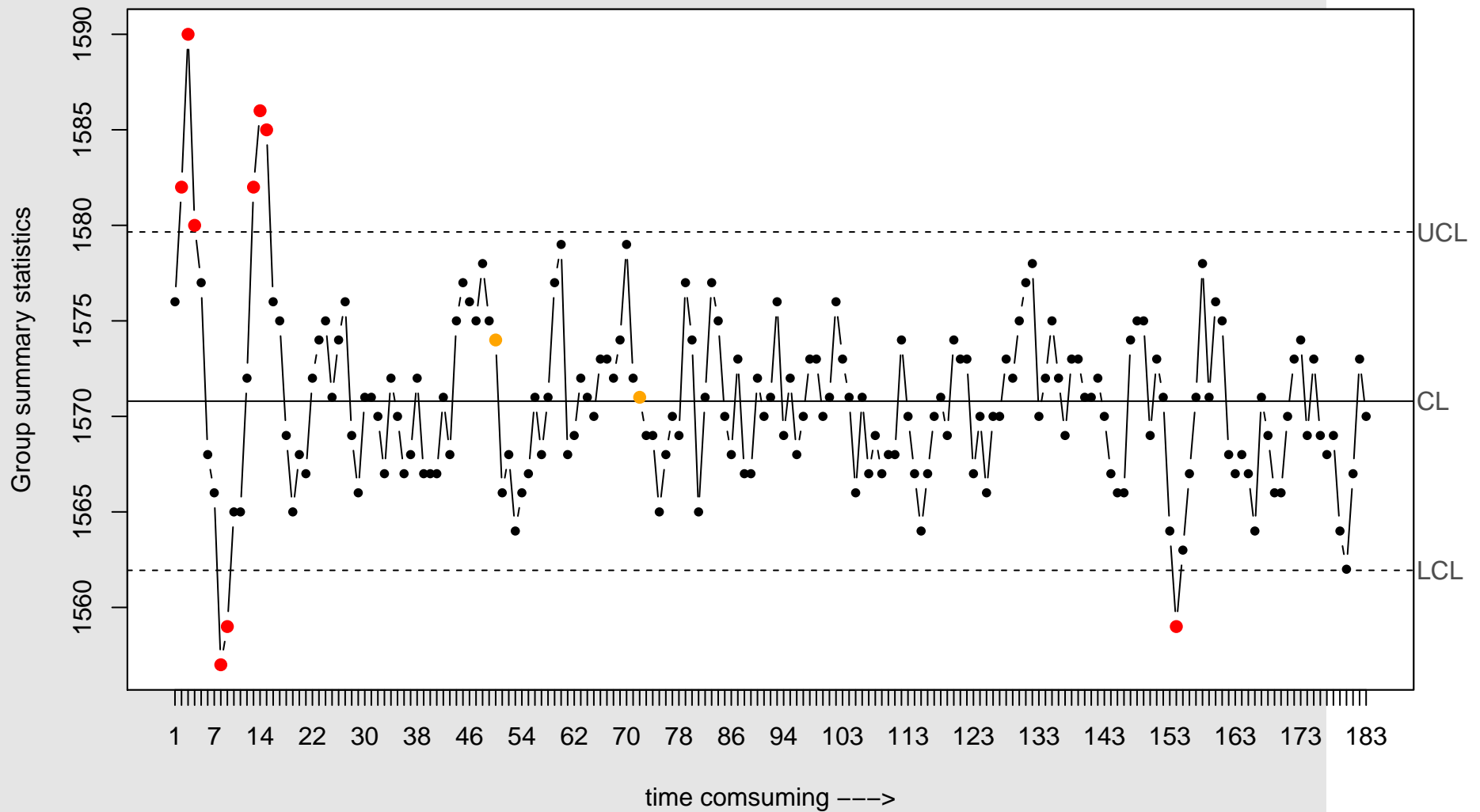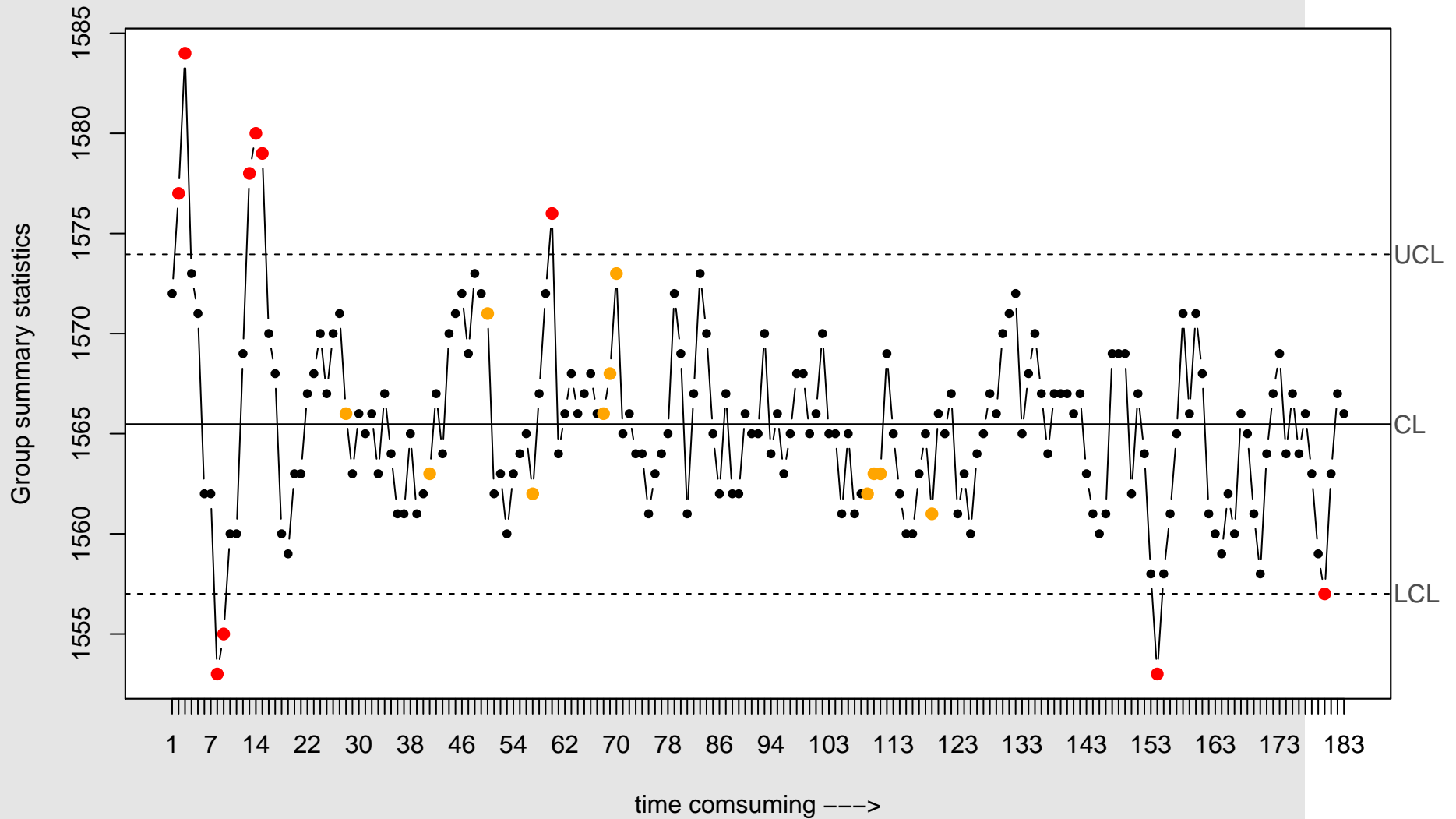Center = 1570.798
StdDev = 2.951835

LCL = 1561.942
UCL = 1579.653

Number beyond limits = 9
Number violating runs = 2

7th column point of this product

Number of groups = 183
Center = 1565.481
StdDev = 2.825189
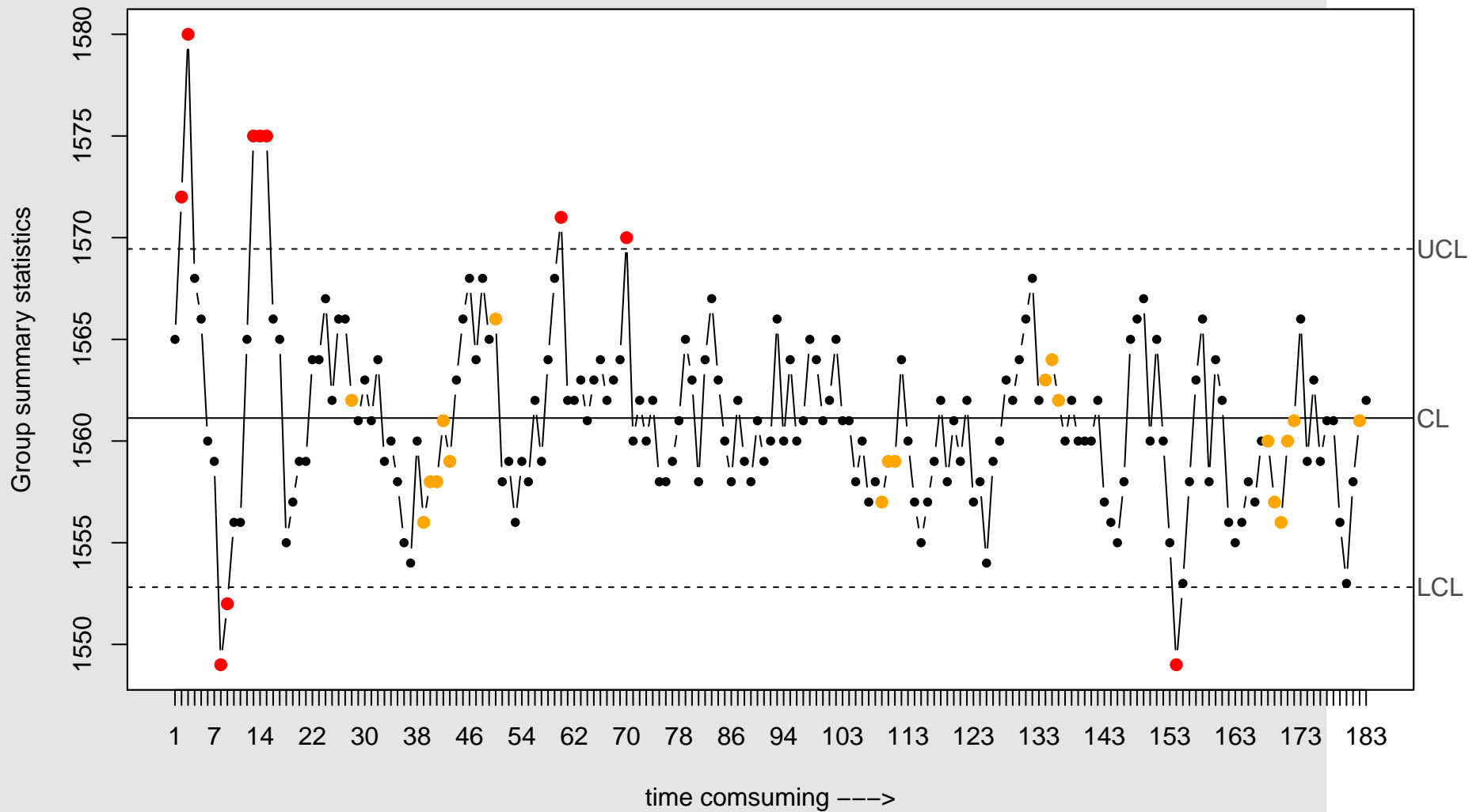
LCL = 1557.005
UCL = 1573.956

Number beyond limits = 10
Number violating runs = 11

8th column point of this product

Group summary statistics

UCL

CL

LCL

time comsuming ---->

Number of groups = 183
Center = 1561.131   LCL = 1552.816   Number beyond limits = 10
StdDev = 2.771608   UCL = 1569.446   Number violating runs = 19

9th column point of this product

Group summary statistics

time comsuming ---->
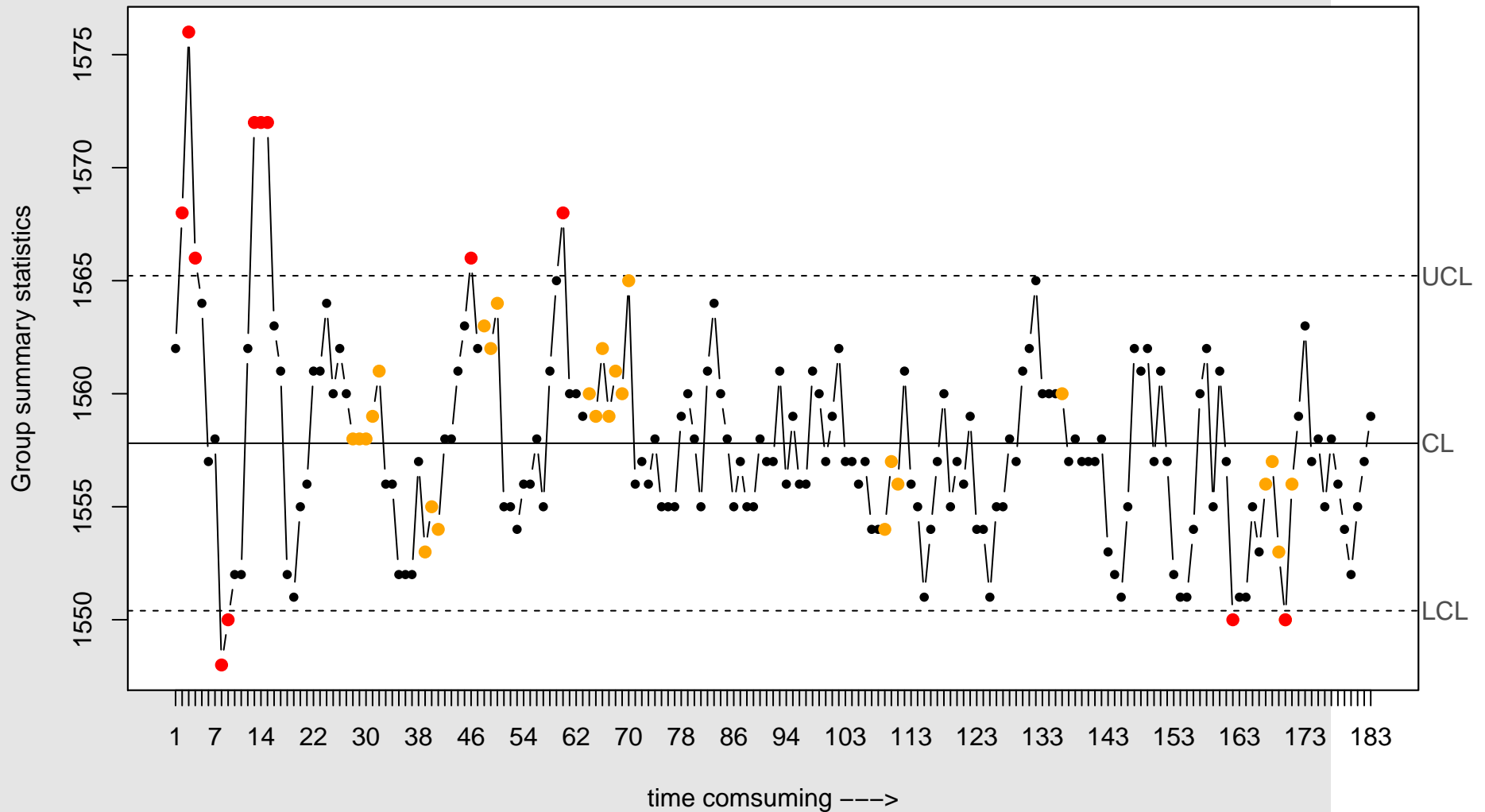
Number of groups = 183
Center = 1557.809
StdDev = 2.469605

LCL = 1550.4
UCL = 1565.218

Number beyond limits = 12
Number violating runs = 27

10th column point of this product

Group summary statistics

time comsuming ---->
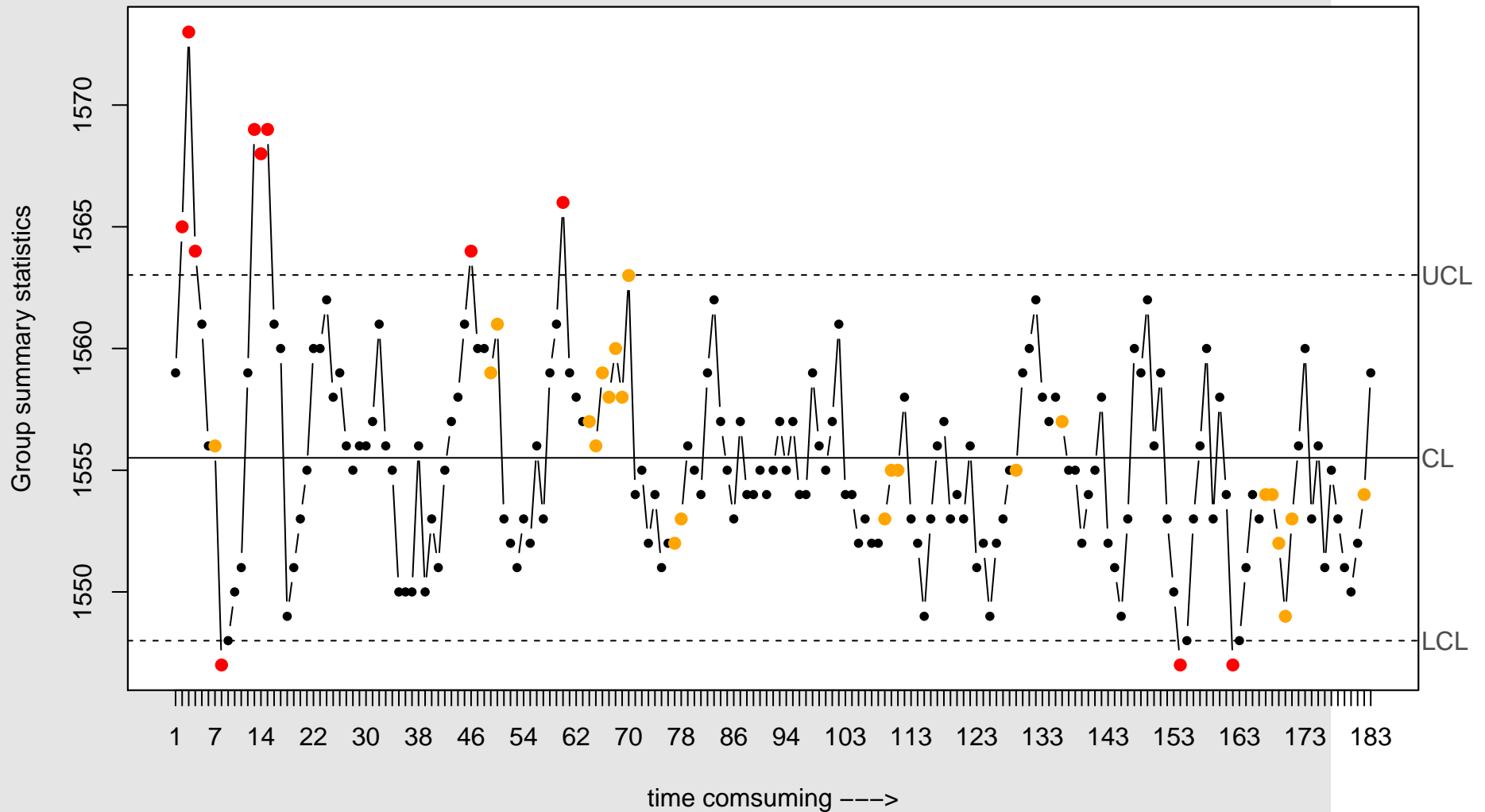
Number of groups = 183
Center = 1555.508   LCL = 1547.997   Number beyond limits = 11
StdDev = 2.503702   UCL = 1563.019   Number violating runs = 23

11th column point of this product

Group summary statistics

time comsuming ---->
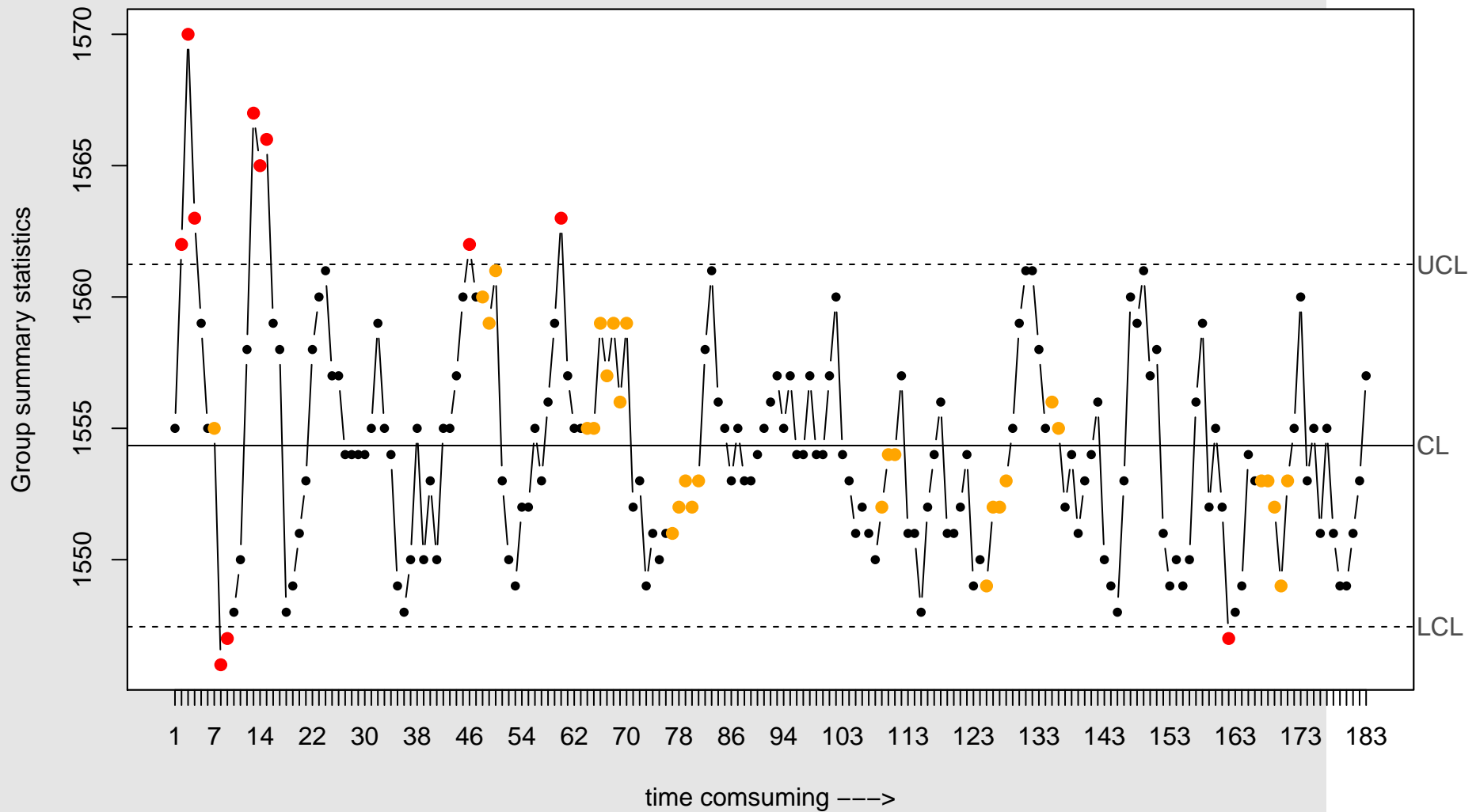
Number of groups = 183
Center = 1554.344   LCL = 1547.447   Number beyond limits = 11
StdDev = 2.299119   UCL = 1561.242   Number violating runs = 30

12th column point of this product

Group summary statistics

1570
1565
1560 — — — UCL
1555 — CL
1550
— — — LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ––––>
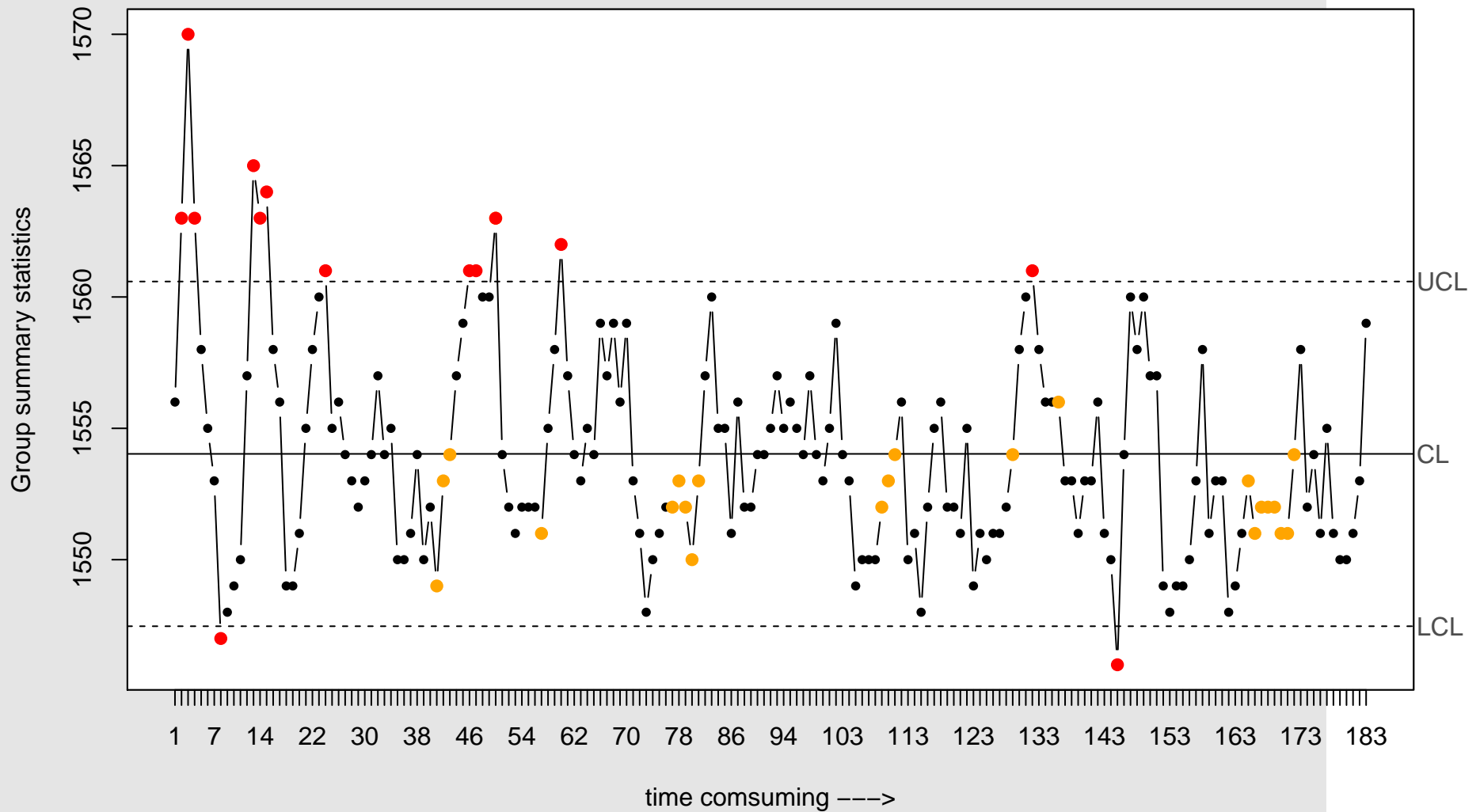
Number of groups = 183
Center = 1554.027   LCL = 1547.466   Number beyond limits = 14
StdDev = 2.187086   UCL = 1560.589   Number violating runs = 23

13th column point of this product

Group summary statistics

time comsuming ---->
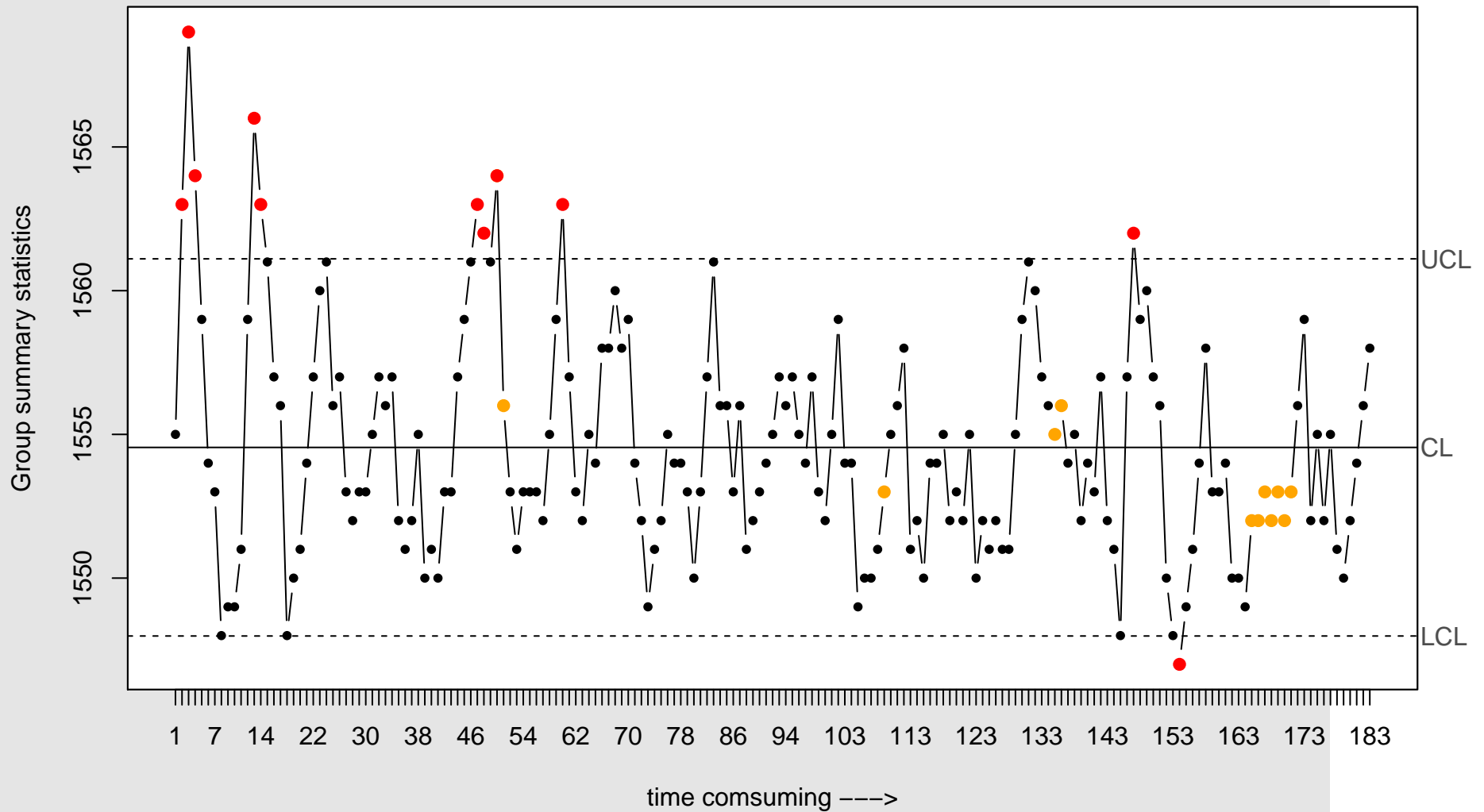
Number of groups = 183
Center = 1554.546   LCL = 1547.985   Number beyond limits = 11
StdDev = 2.187086   UCL = 1561.108   Number violating runs = 12

14th column point of this product
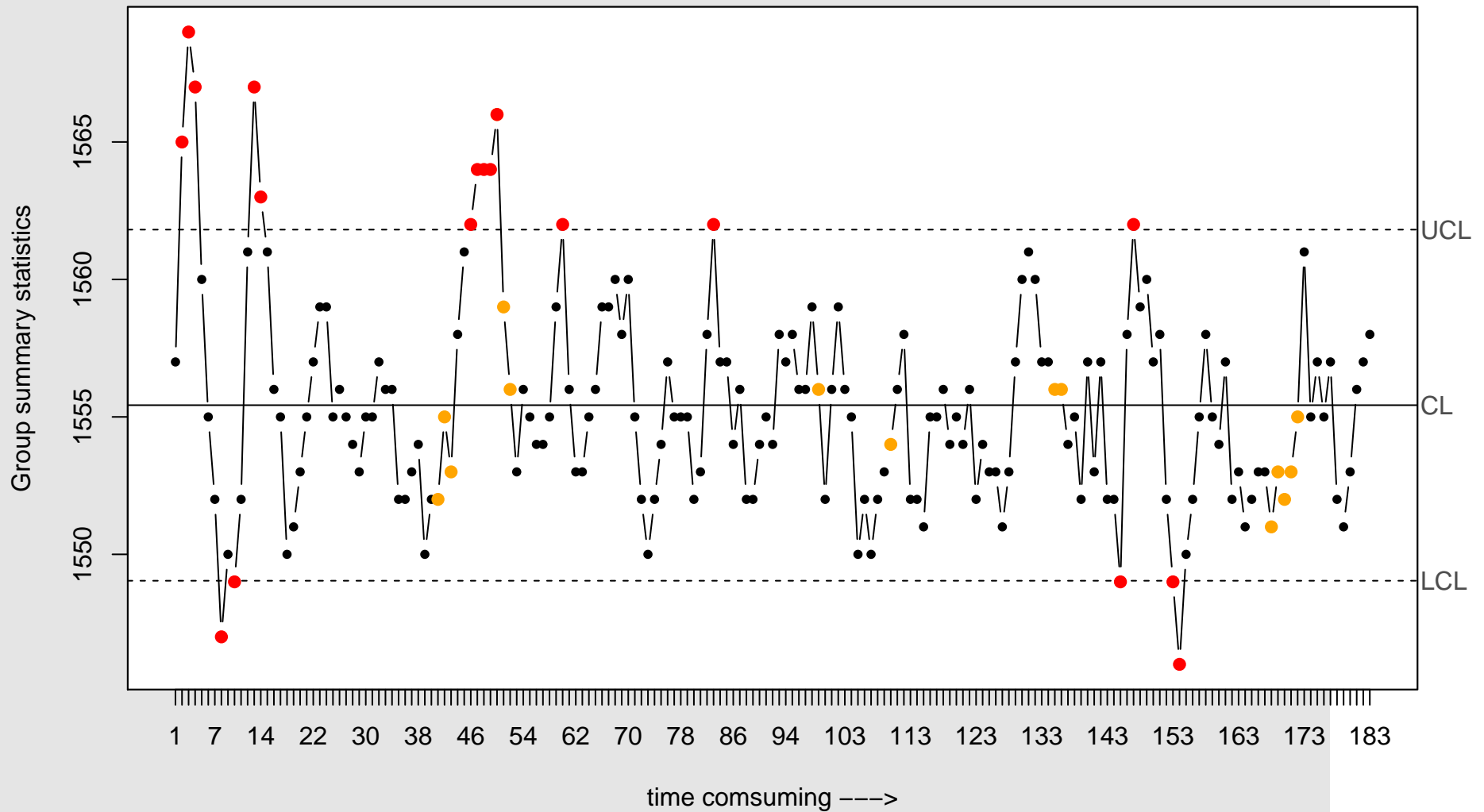
Number of groups = 183
Center = 1555.426   LCL = 1549.04   Number beyond limits = 18
StdDev = 2.128634   UCL = 1561.812   Number violating runs = 15

15th column point of this product
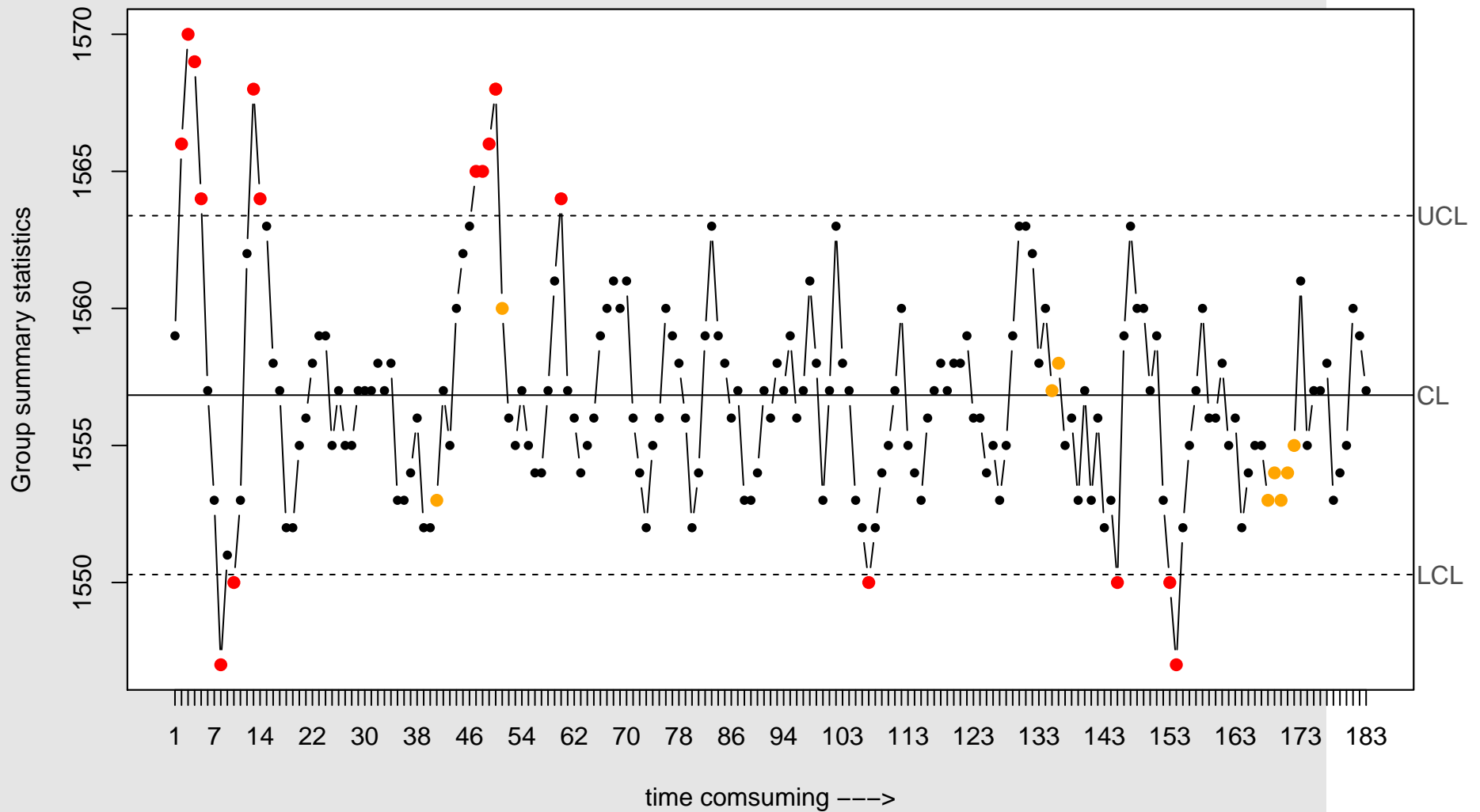
Number of groups = 183
Center = 1556.836   LCL = 1550.289   Number beyond limits = 17
StdDev = 2.182215   UCL = 1563.383   Number violating runs = 10

16th column point of this product
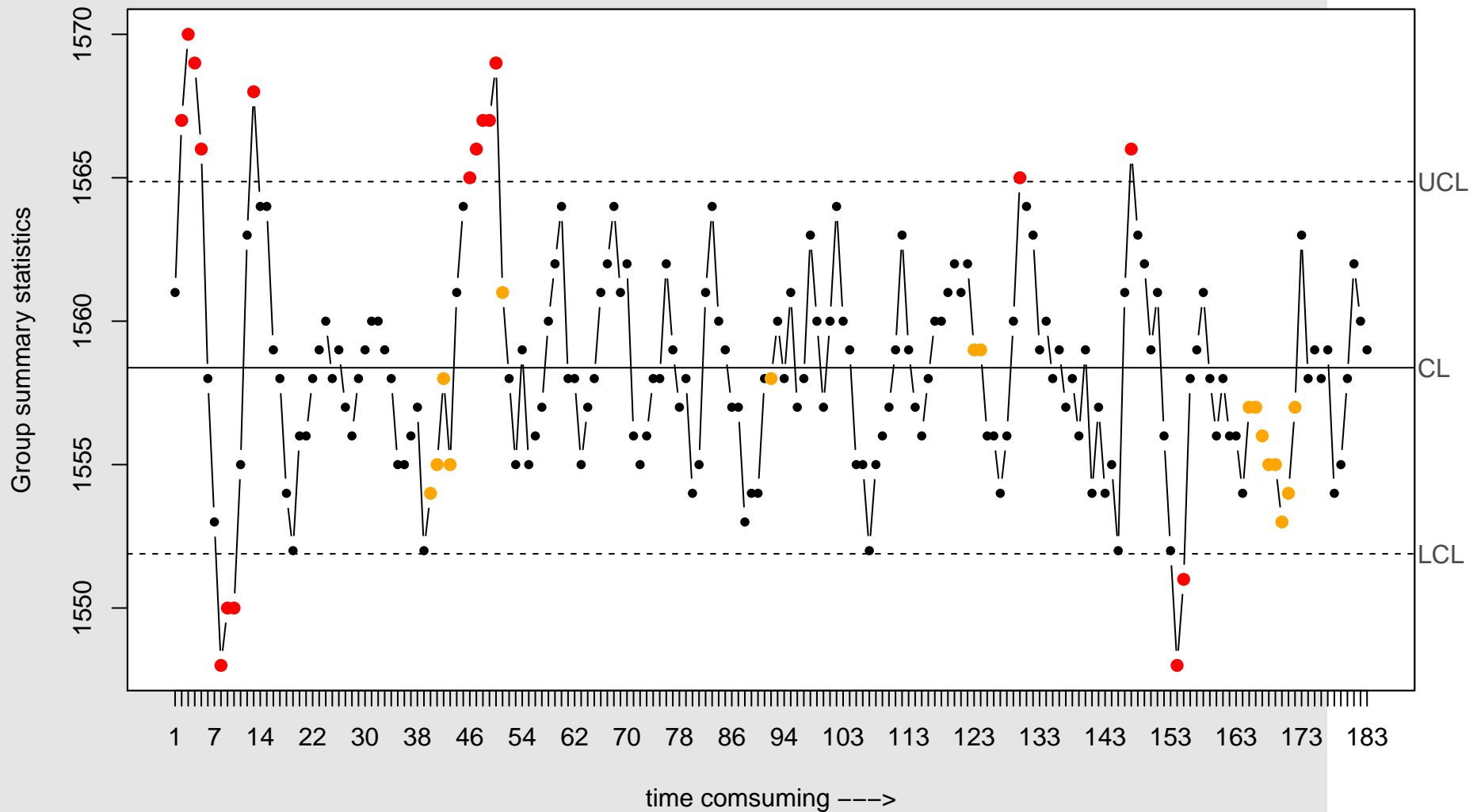
Number of groups = 183
Center = 1558.377   LCL = 1551.889   Number beyond limits = 17
StdDev = 2.162731   UCL = 1564.865   Number violating runs = 17

17th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1560.525
StdDev = 2.094537

LCL = 1554.241
UCL = 1566.808

Number beyond limits = 21
Number violating runs = 18
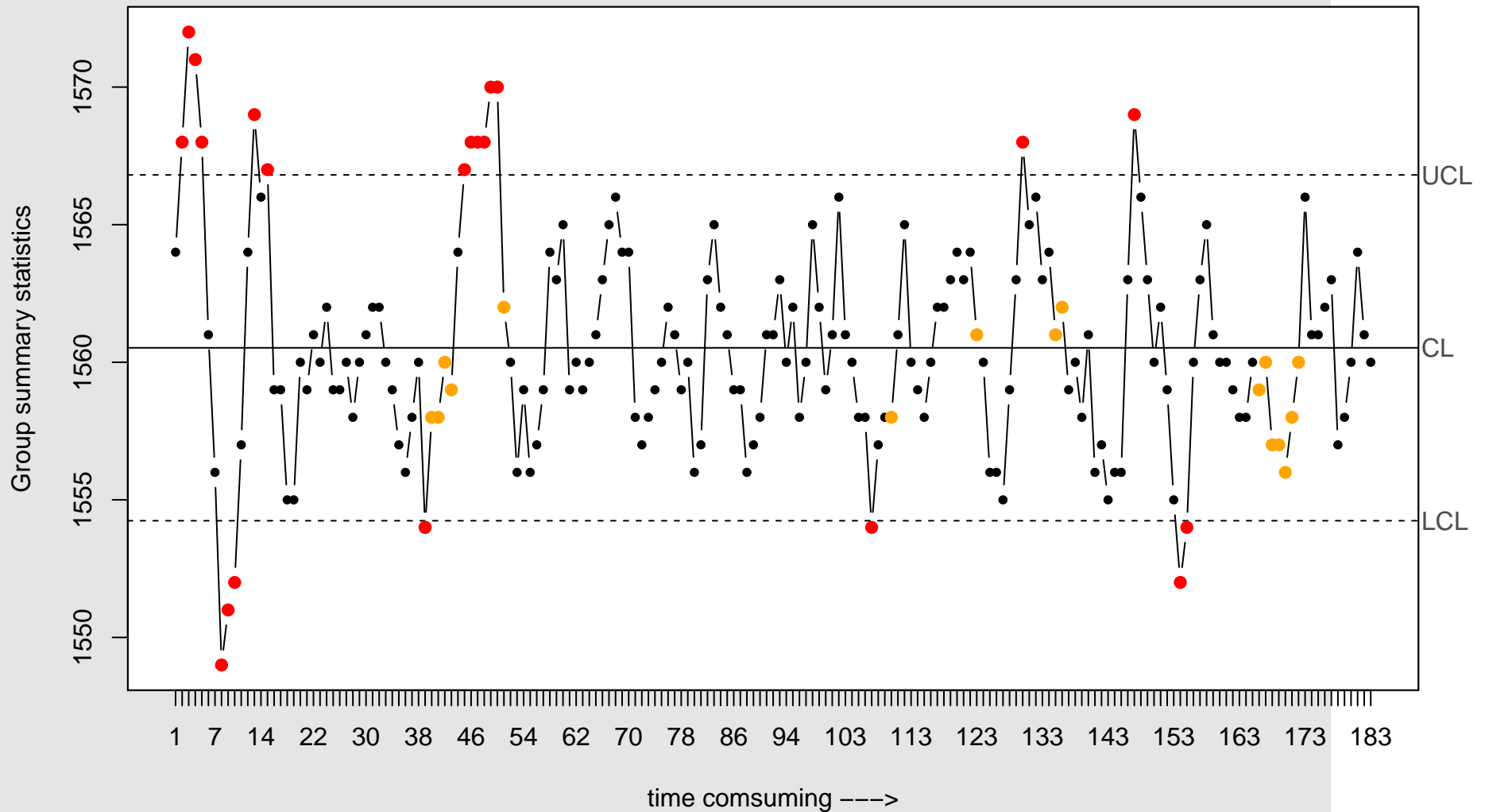
18th column point of this product

Group summary statistics

1565   CL

UCL

LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ---->

Number of groups = 183
Center = 1563.06   LCL = 1556.879   Number beyond limits = 17
StdDev = 2.06044   UCL = 1569.241   Number violating runs = 13

19th column point of this product

Group summary statistics

UCL

CL

LCL

1575
1570
1565
1560
1555

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183
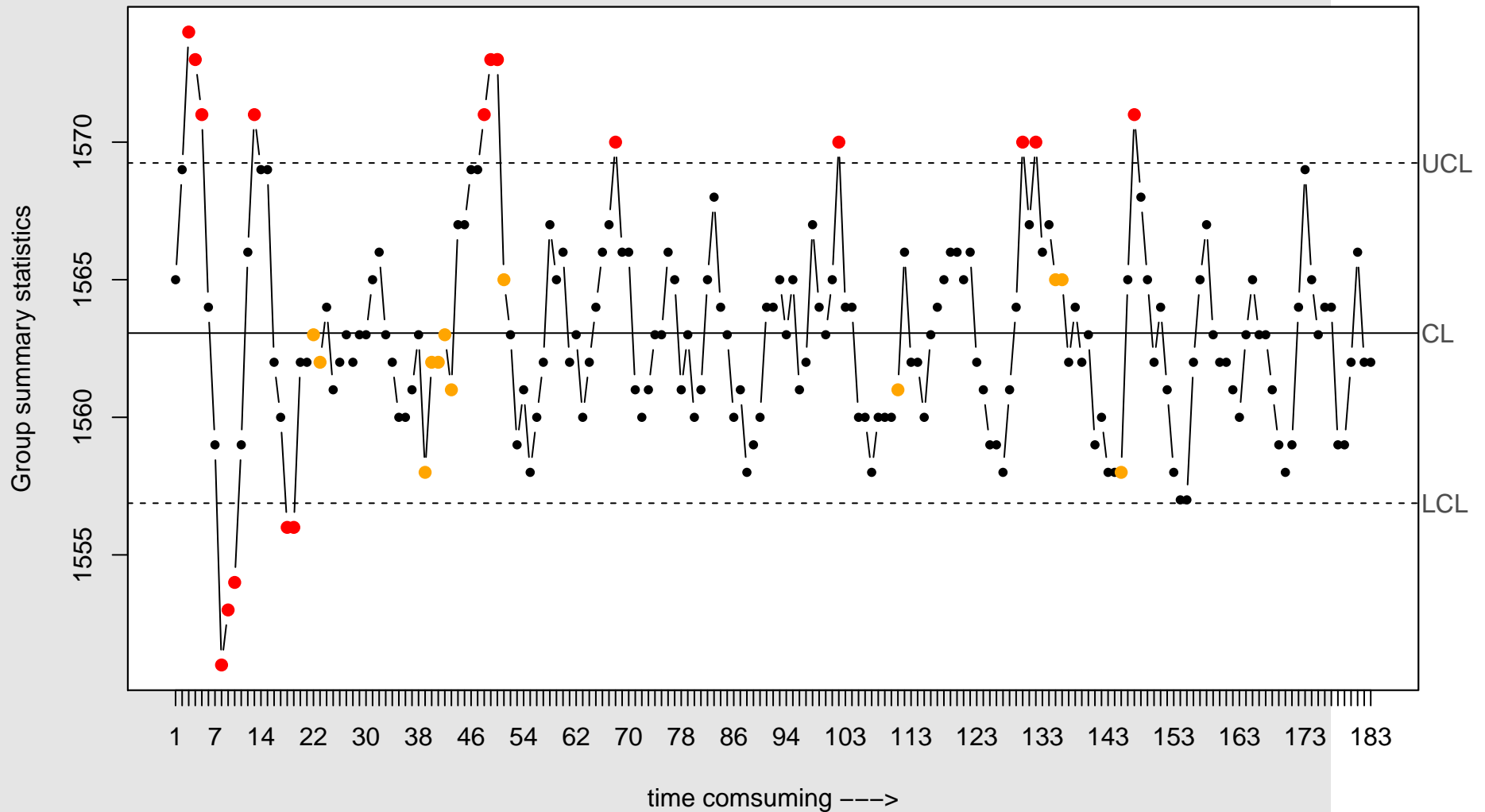
time comsuming ---->

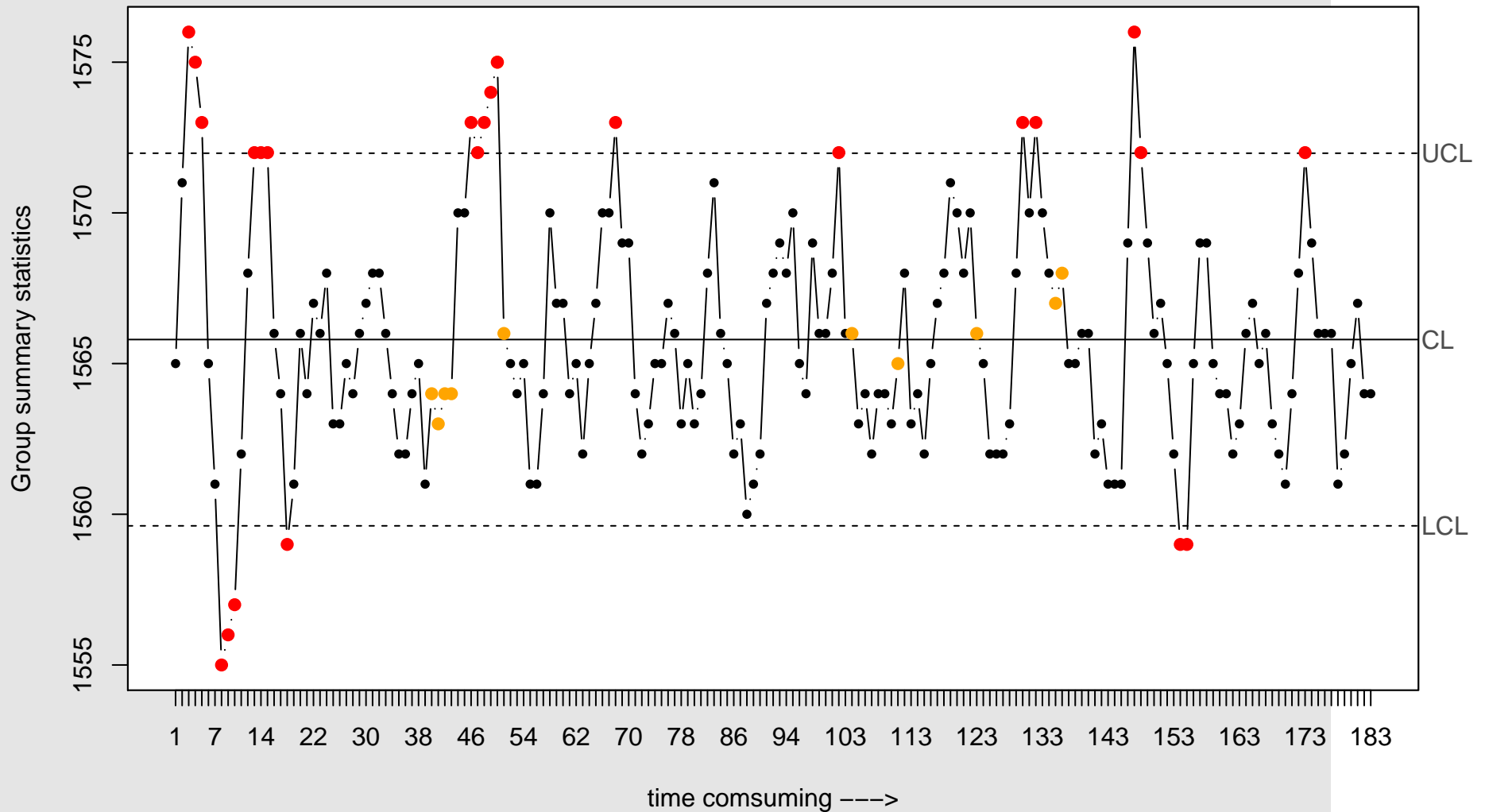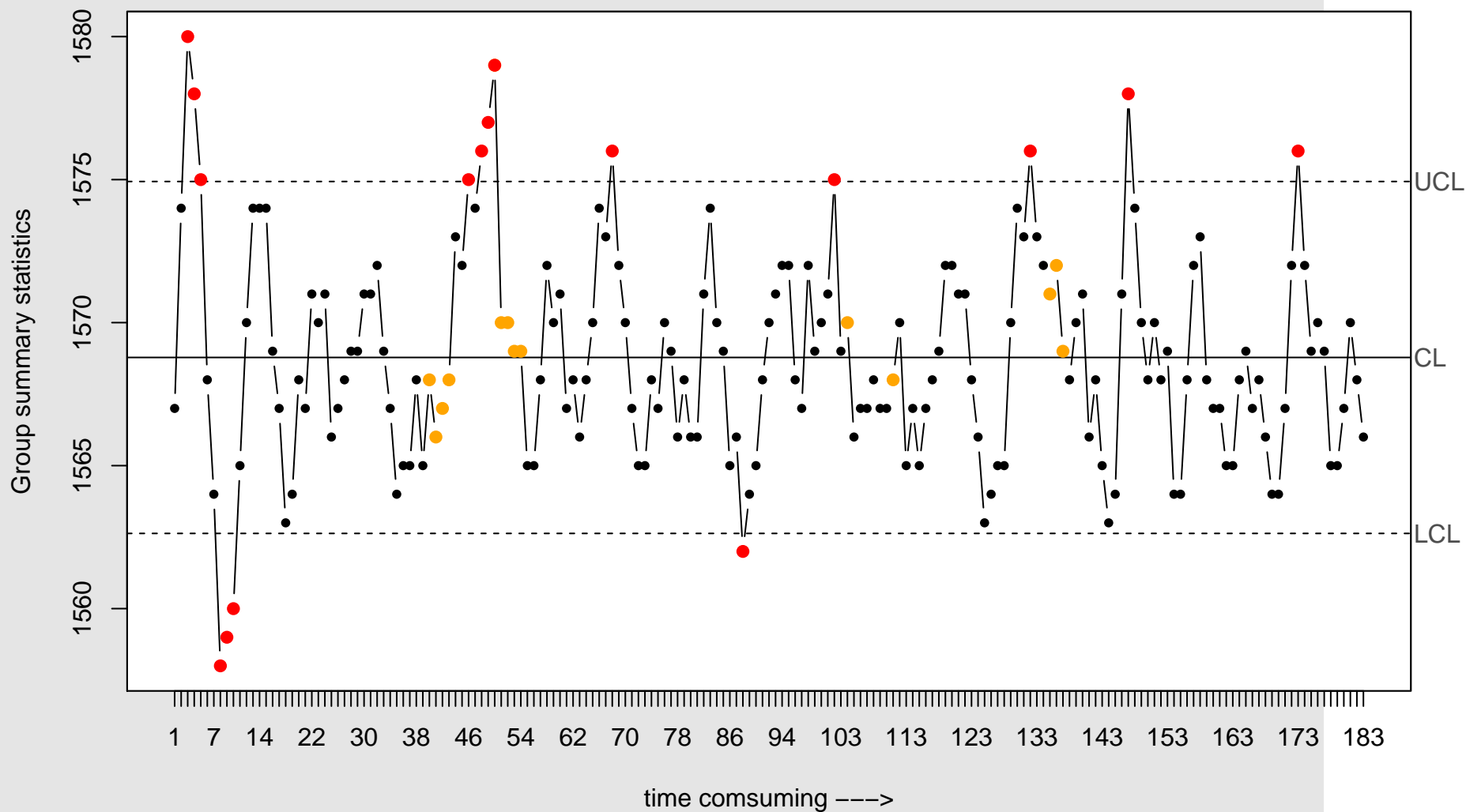Number of groups = 183
Center = 1565.798
StdDev = 2.06044

LCL = 1559.616
UCL = 1571.979

Number beyond limits = 24
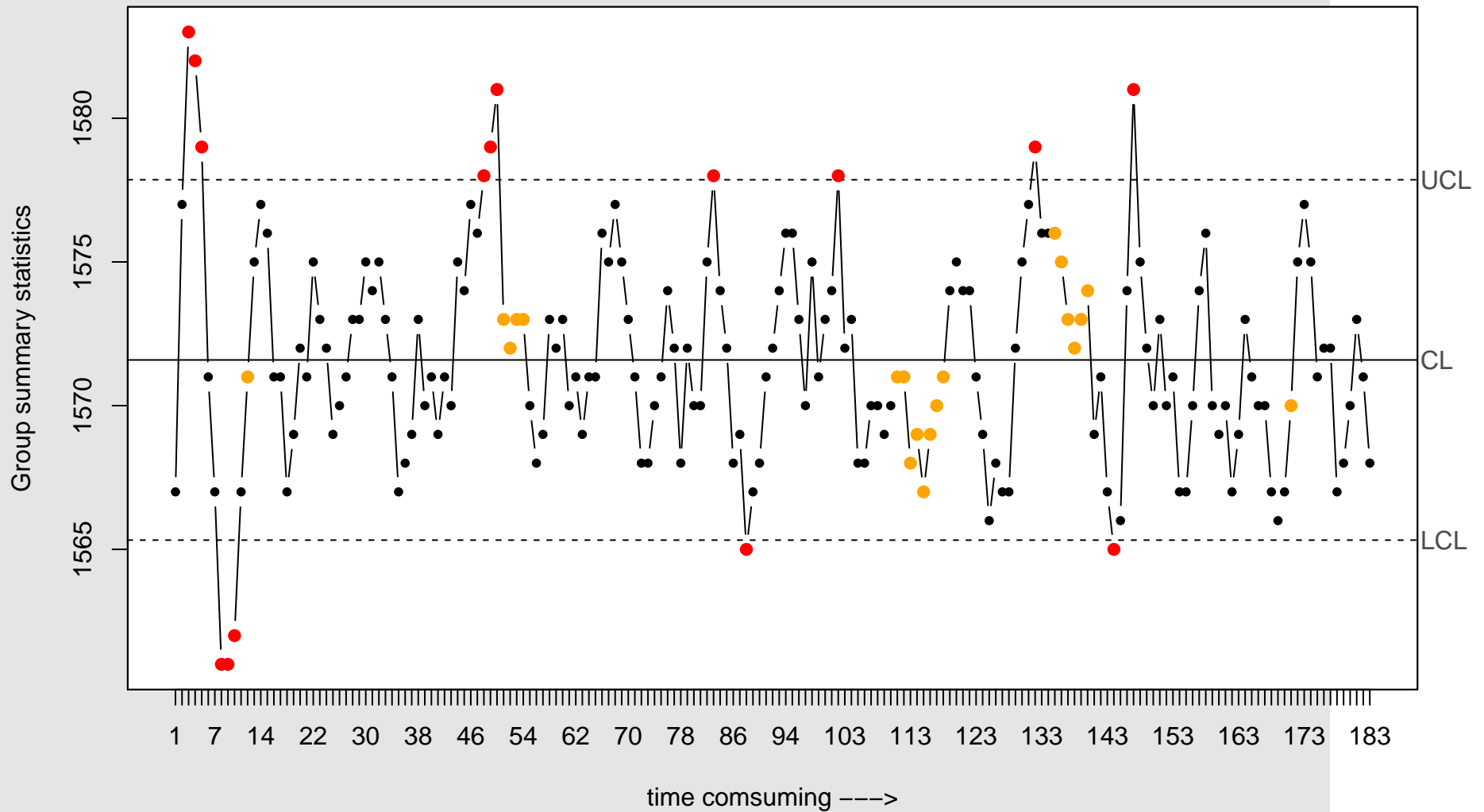Number violating runs = 11

20th column point of this product

Number of groups = 183
Center = 1568.781   LCL = 1562.629   Number beyond limits = 16
StdDev = 2.050698   UCL = 1574.934   Number violating runs = 14

21th column point of this product

Group summary statistics

1580
1575
1570
1565

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

UCL
CL
LCL

time comsuming ---->

Number of groups = 183
Center = 1571.59   LCL = 1565.321   Number beyond limits = 15
StdDev = 2.089666   UCL = 1577.859   Number violating runs = 21

22th column point of this product

Group summary statistics

time comsuming --->
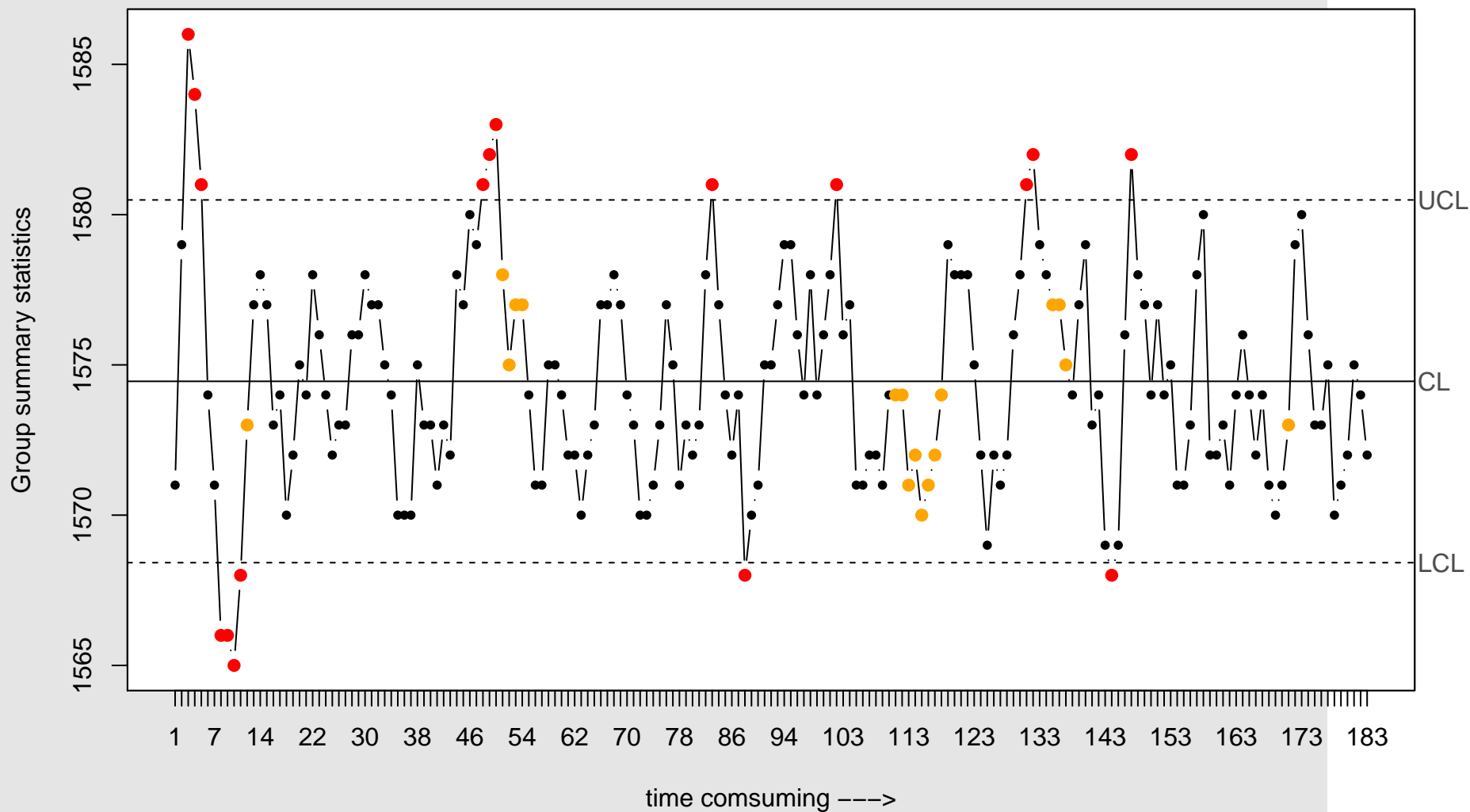
Number of groups = 183
Center = 1574.454   LCL = 1568.418   Number beyond limits = 17
StdDev = 2.011729   UCL = 1580.489   Number violating runs = 18

23th column point of this product

Group summary statistics

UCL

CL

LCL

1585

1580

1575

1570

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ––––>
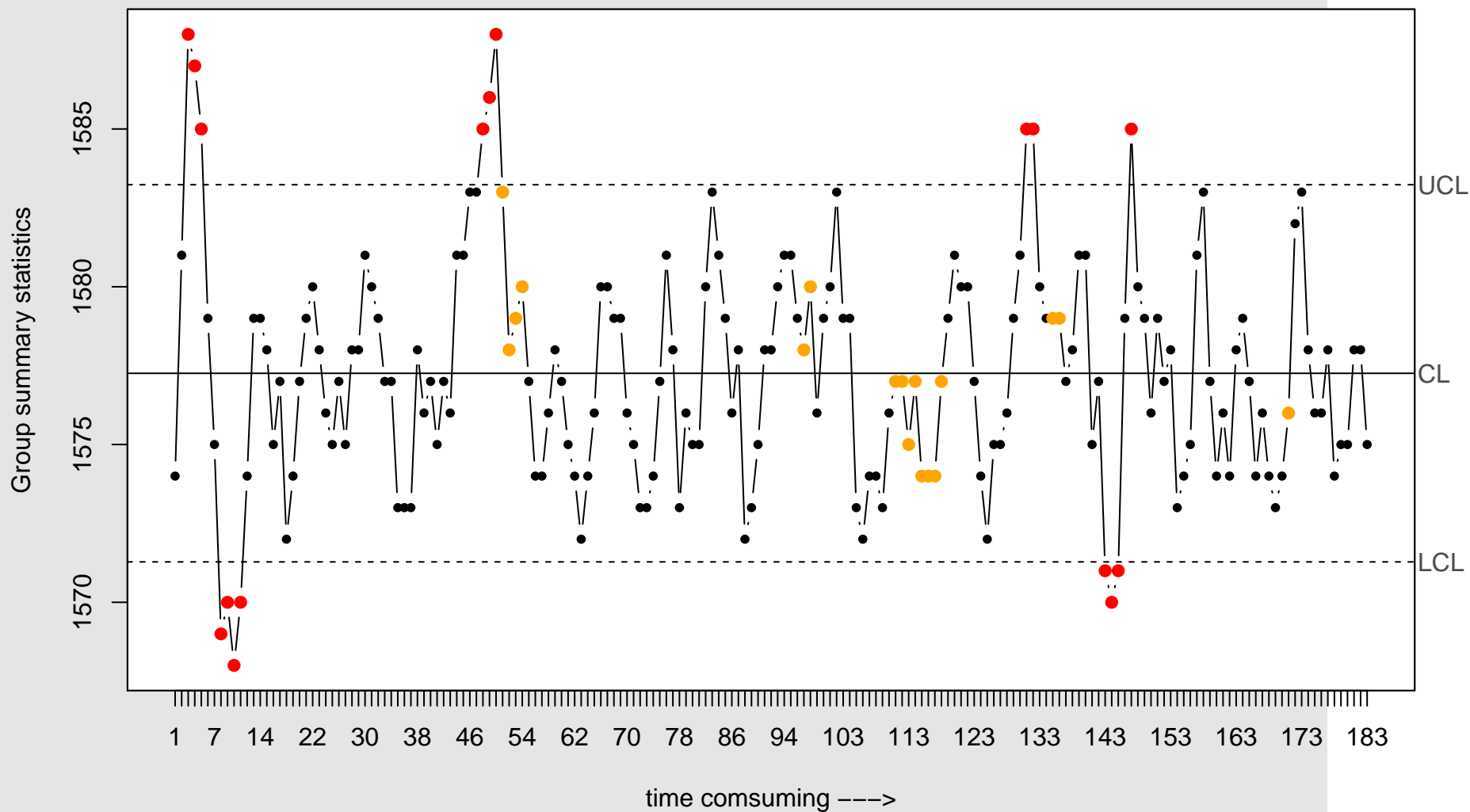
Number of groups = 183
Center = 1577.257   LCL = 1571.28   Number beyond limits = 16
StdDev = 1.992245   UCL = 1583.234   Number violating runs = 18

24th column point of this product

Group summary statistics

time comsuming --->
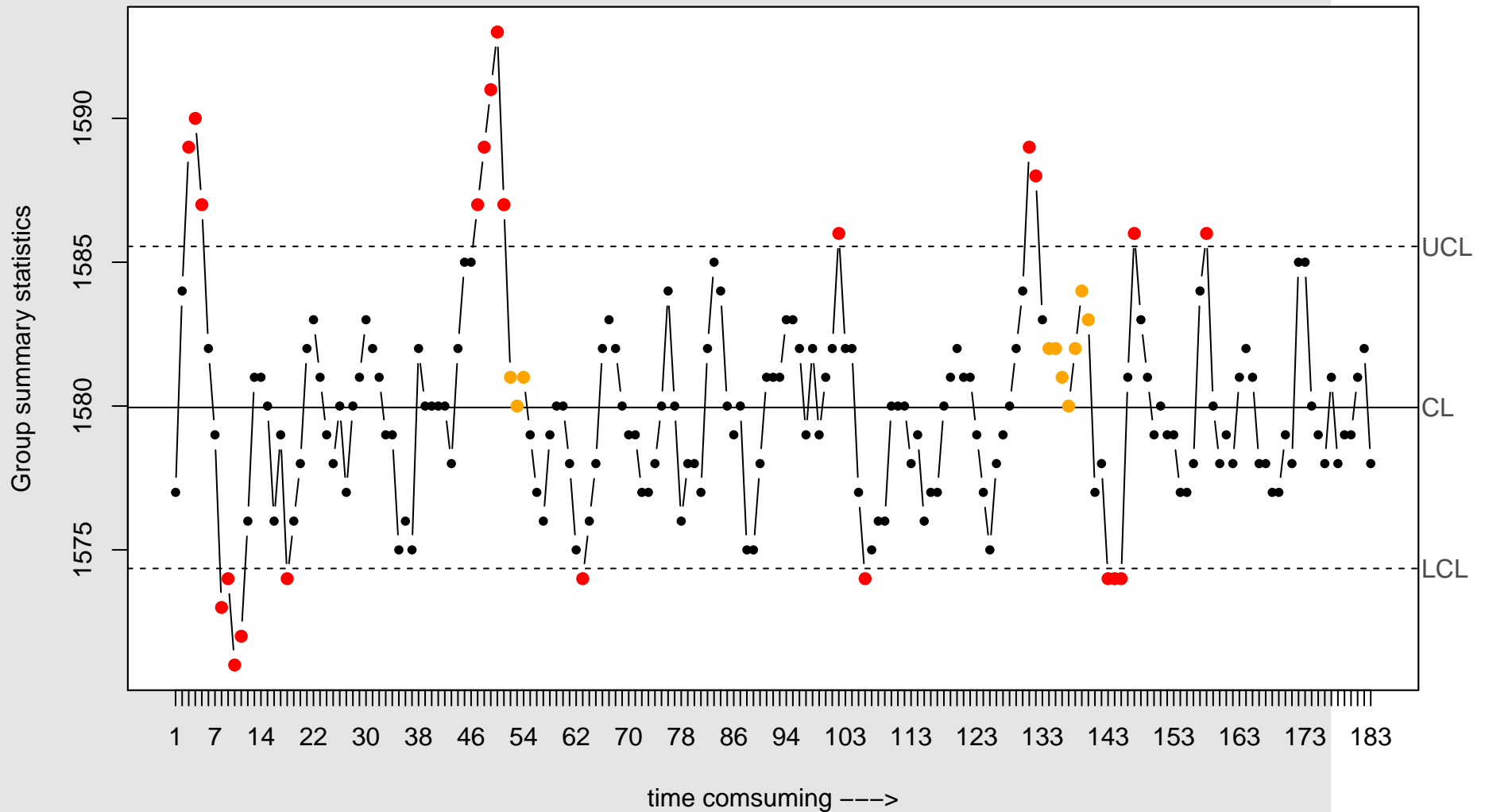
Number of groups = 183
Center = 1579.951   LCL = 1574.354   Number beyond limits = 23
StdDev = 1.865599   UCL = 1585.548   Number violating runs = 12

25th column point of this product
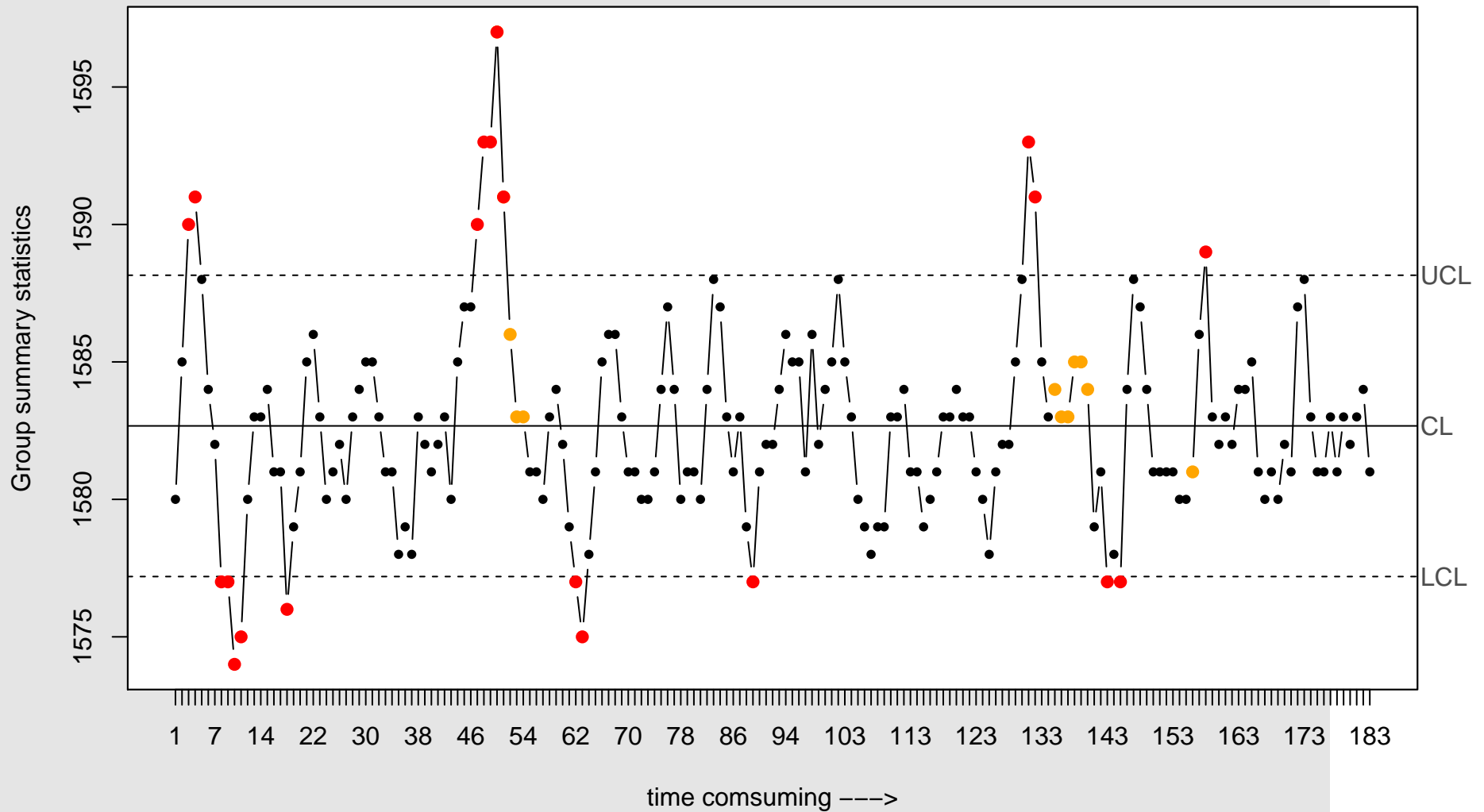
Number of groups = 183
Center = 1582.672   LCL = 1577.192   Number beyond limits = 20
StdDev = 1.826631   UCL = 1588.152   Number violating runs = 12

26th column point of this product

Group summary statistics

time comsuming ––––>
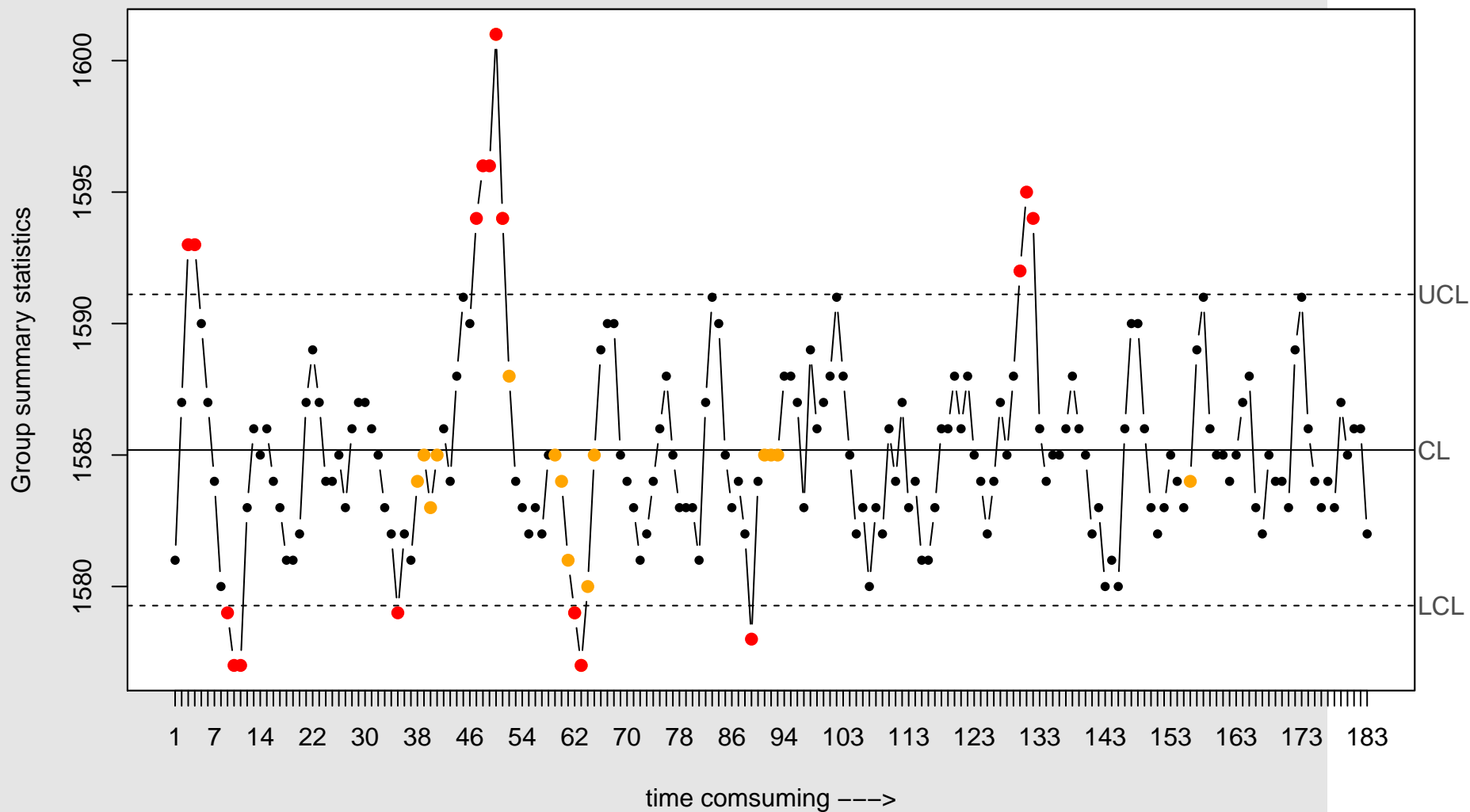
Number of groups = 183
Center = 1585.191   LCL = 1579.273   Number beyond limits = 17
StdDev = 1.972761   UCL = 1591.11   Number violating runs = 18

27th column point of this product

Group summary statistics

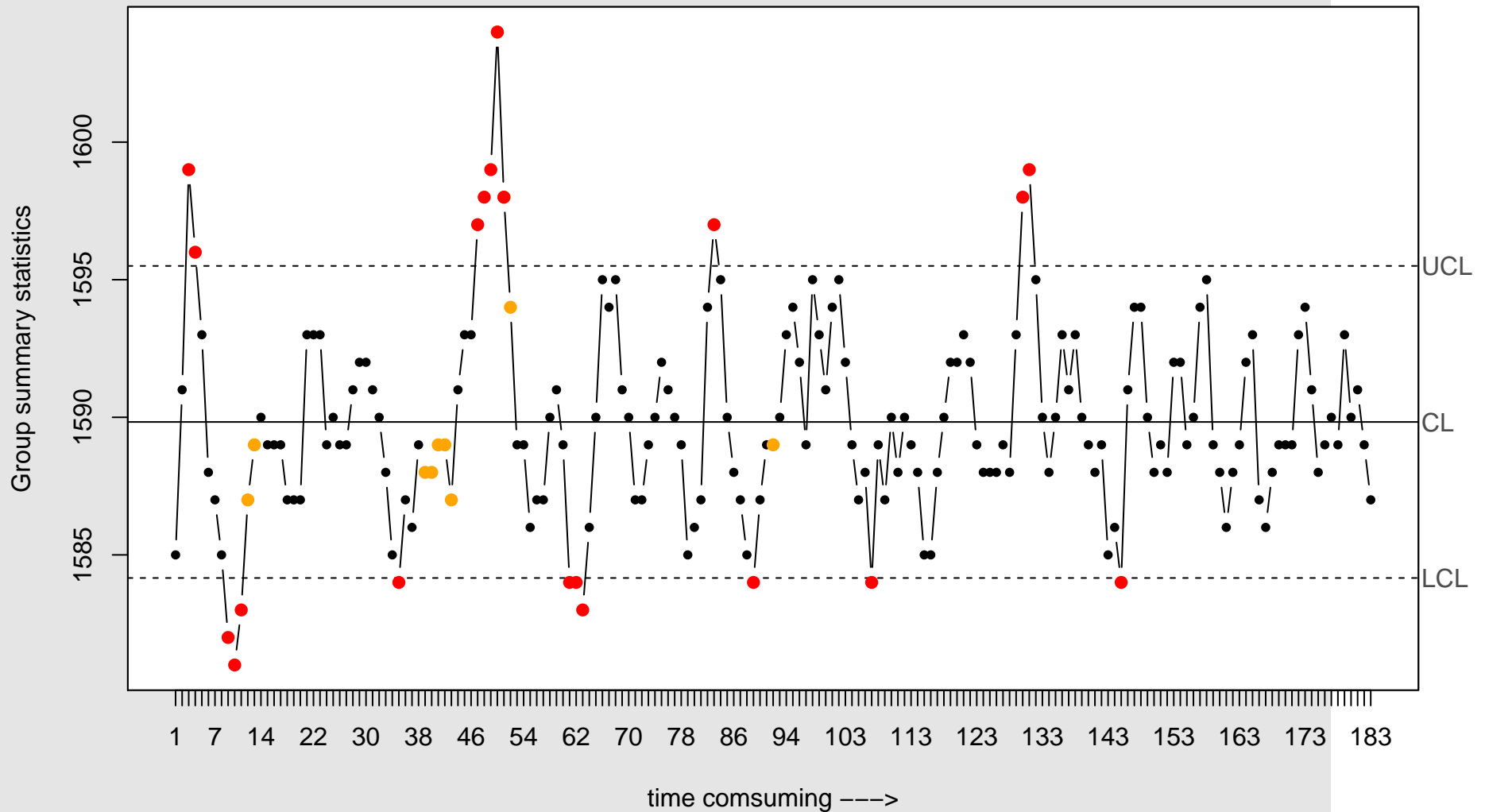time comsuming ––––>
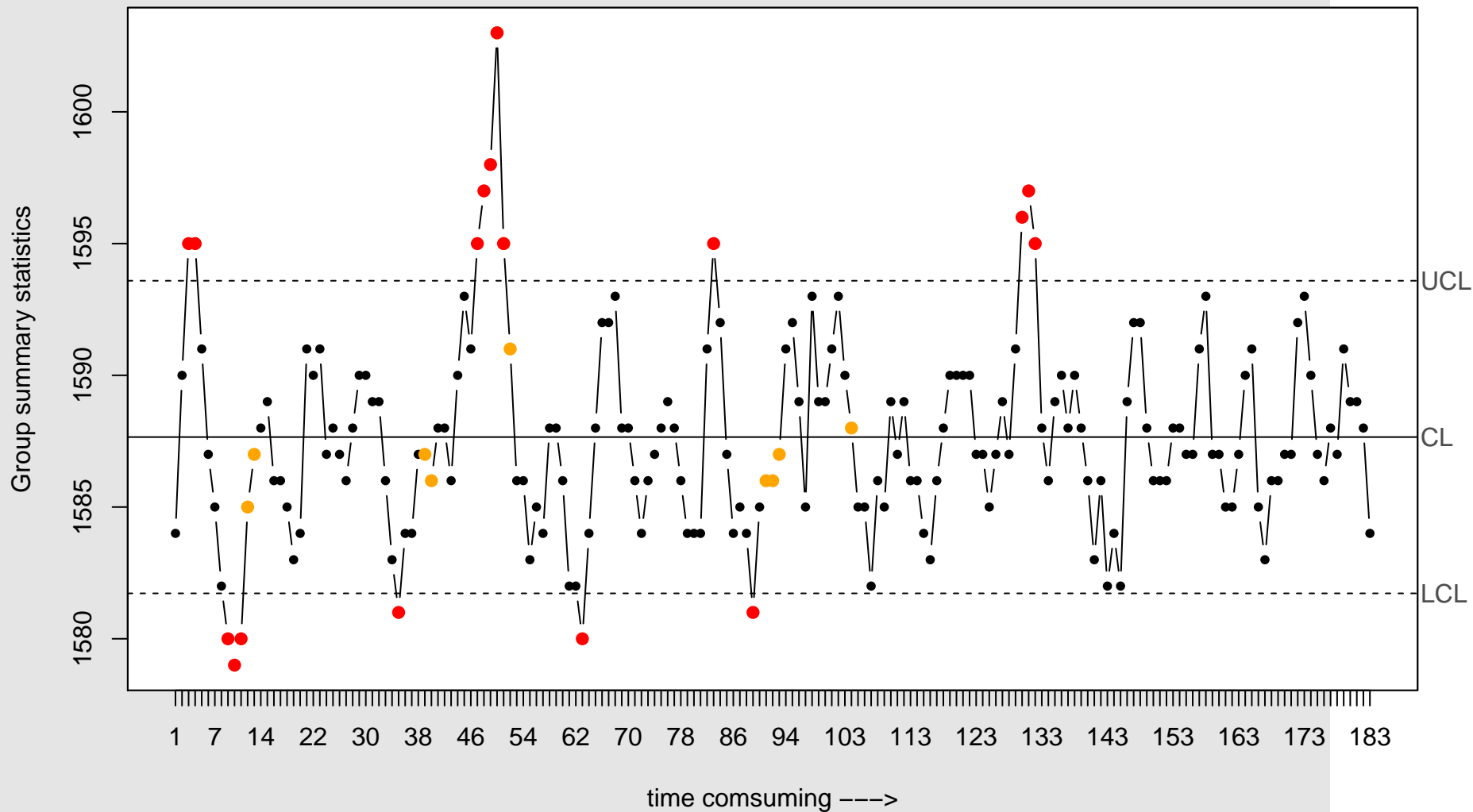
Number of groups = 183
Center = 1587.656
StdDev = 1.977632

LCL = 1581.723
UCL = 1593.589

Number beyond limits = 17
Number violating runs = 11

28th column point of this product

Group summary statistics

1600
1595 — — — — — — — — — — — — UCL
1590 ——————————————— CL
1585
— — — — — — — — — — — — LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ---->

Number of groups = 183
Center = 1589.831   LCL = 1584.161   Number beyond limits = 20
StdDev = 1.889954   UCL = 1595.5   Number violating runs = 11

29th column point of this product

Group summary statistics

time comsuming –––>
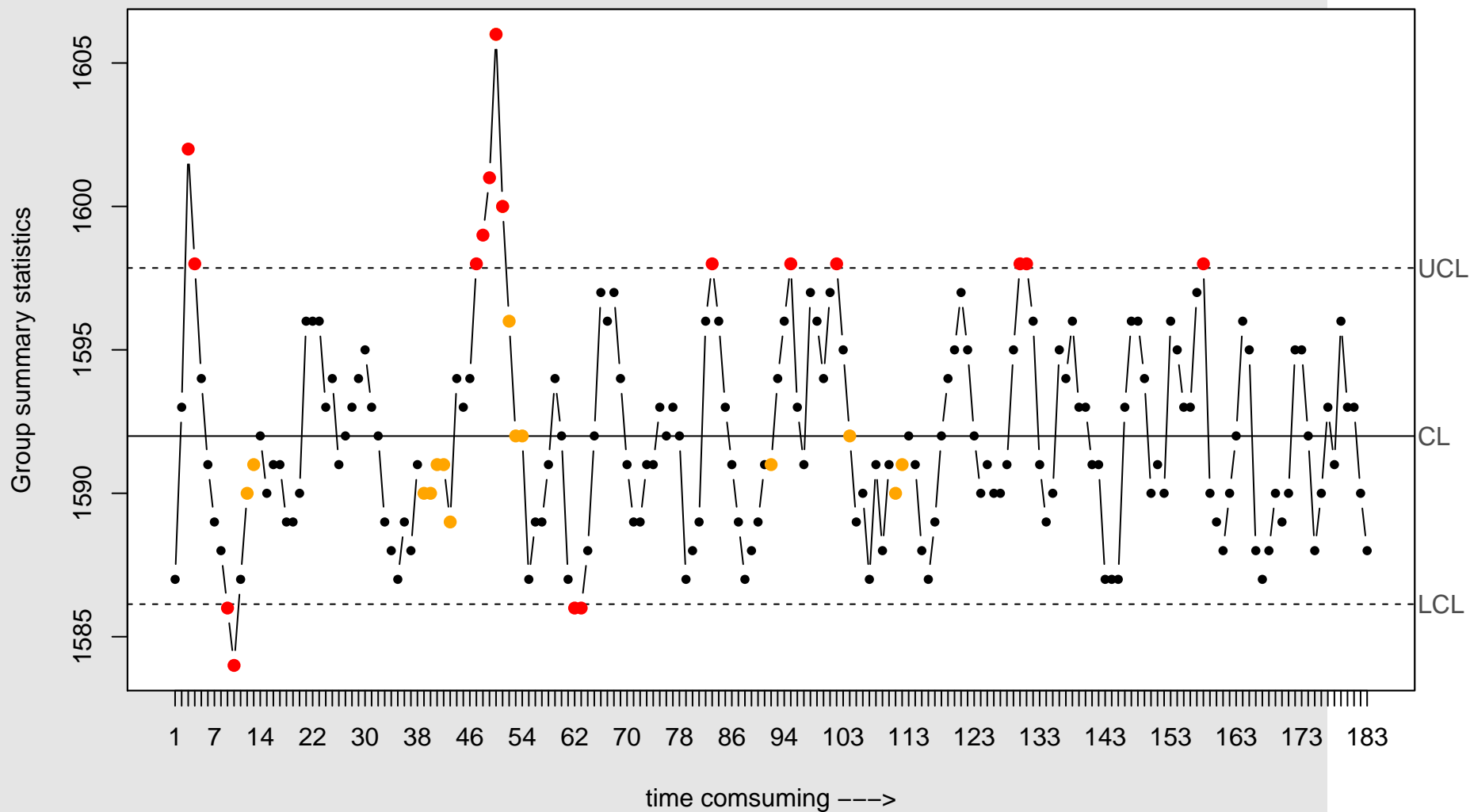
Number of groups = 183
Center = 1591.995   LCL = 1586.135   Number beyond limits = 17
StdDev = 1.953277   UCL = 1597.854   Number violating runs = 16

30th column point of this product

Group summary statistics

time comsuming ----->
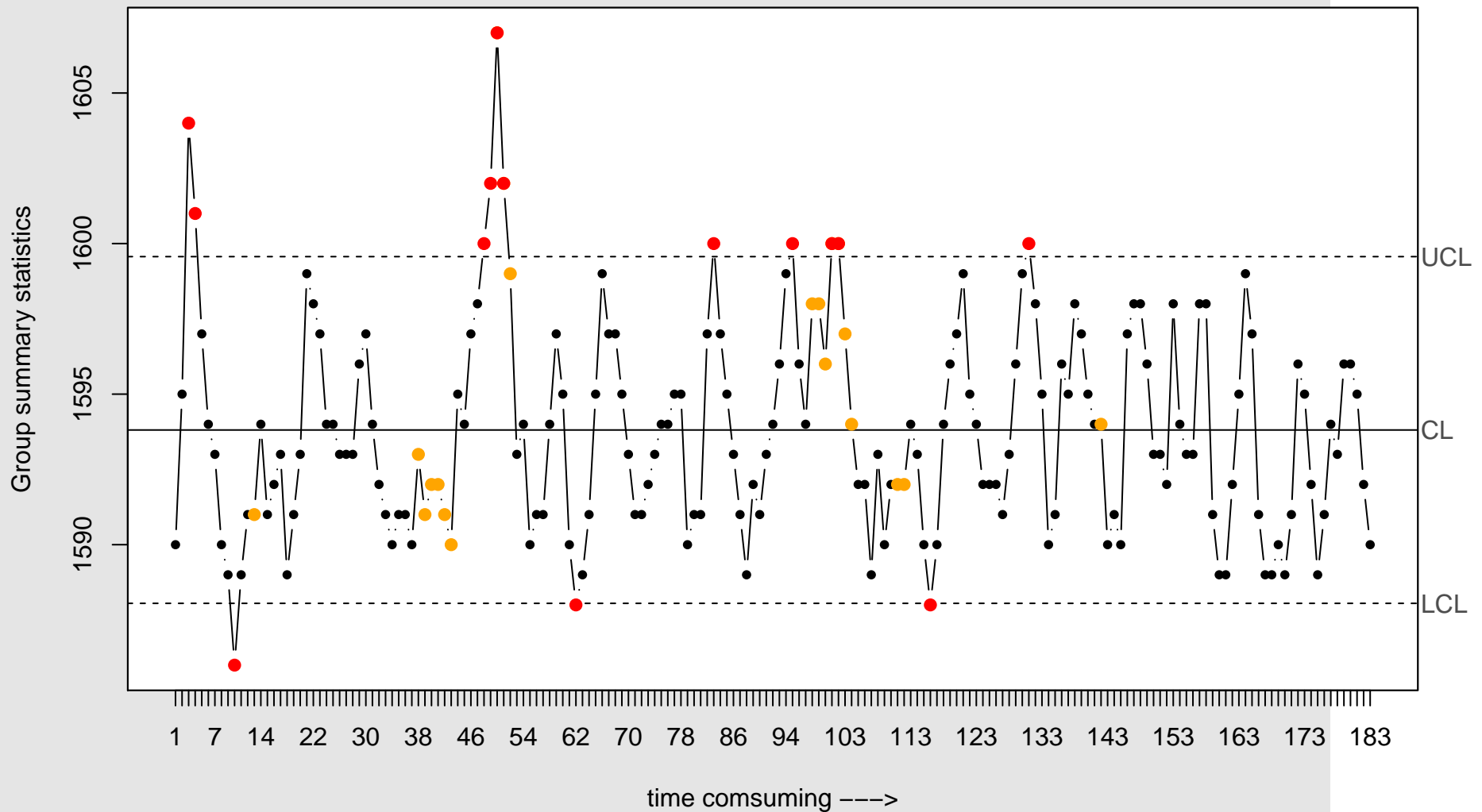
Number of groups = 183
Center = 1593.809   LCL = 1588.051   Number beyond limits = 14
StdDev = 1.91918   UCL = 1599.566   Number violating runs = 20

31th column point of this product

Group summary statistics

time comsuming ---->
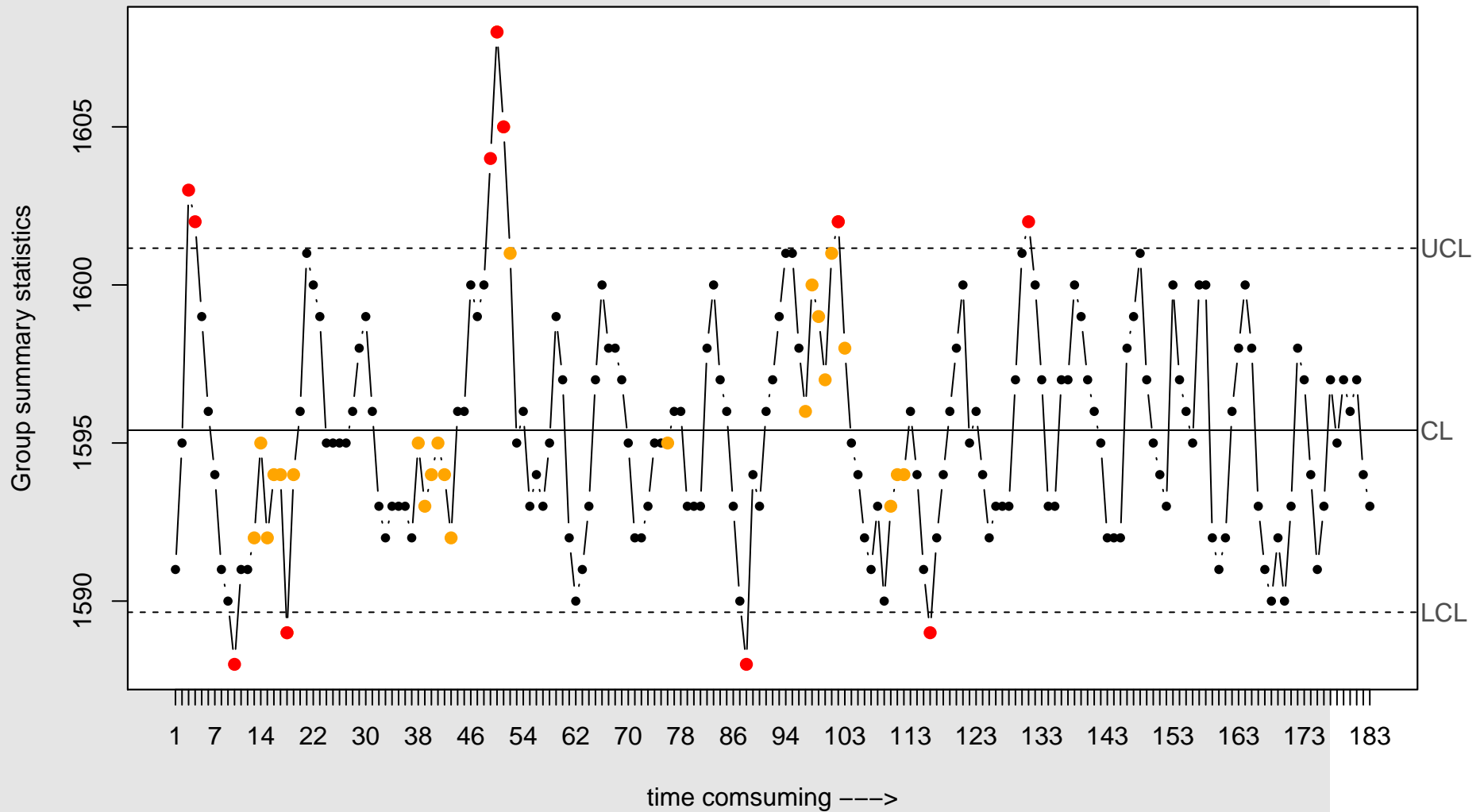
Number of groups = 183
Center = 1595.404   LCL = 1589.647   Number beyond limits = 11
StdDev = 1.91918   UCL = 1601.162   Number violating runs = 27

32th column point of this product

Group summary statistics

time comsuming ––––>
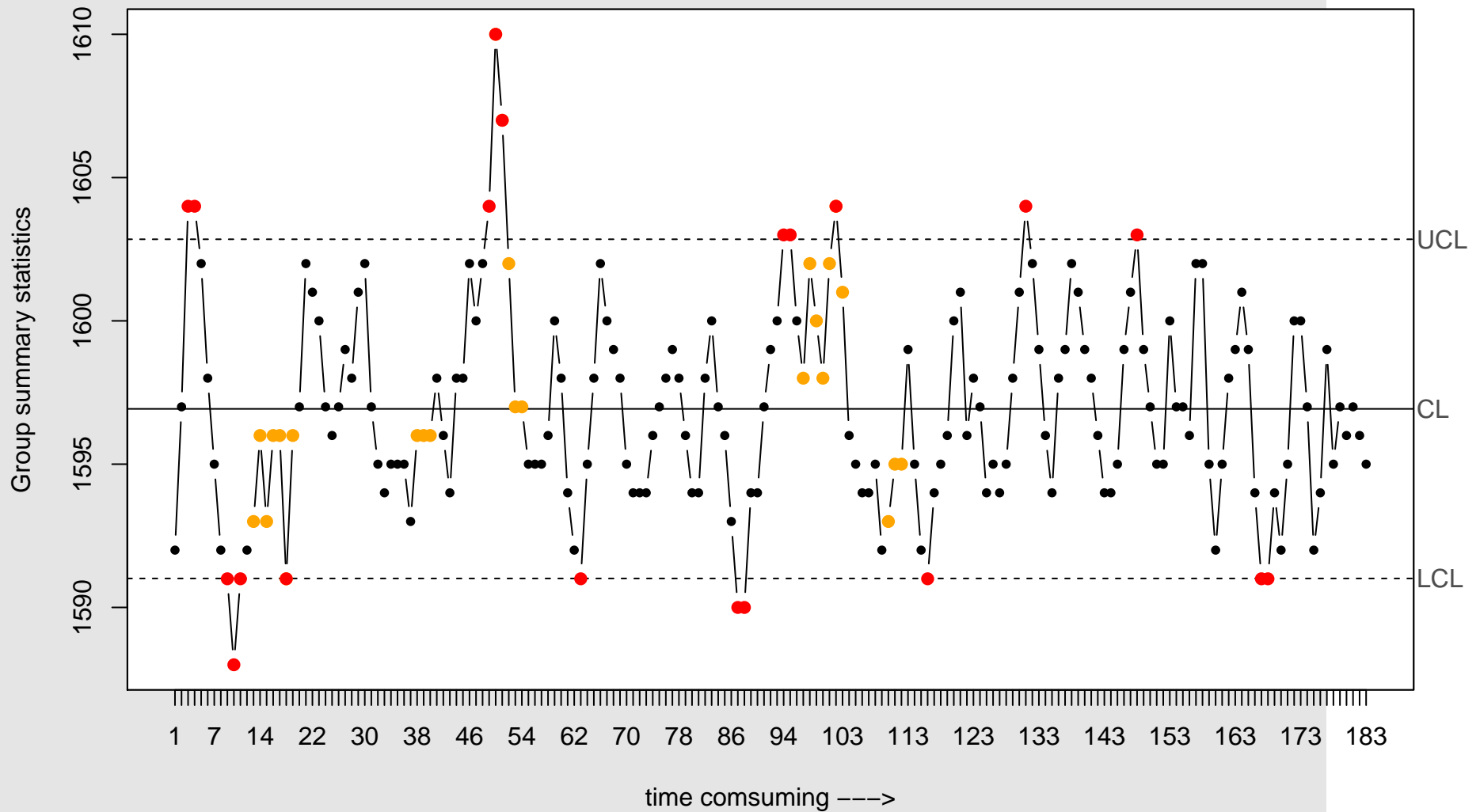
Number of groups = 183
Center = 1596.929
StdDev = 1.972761

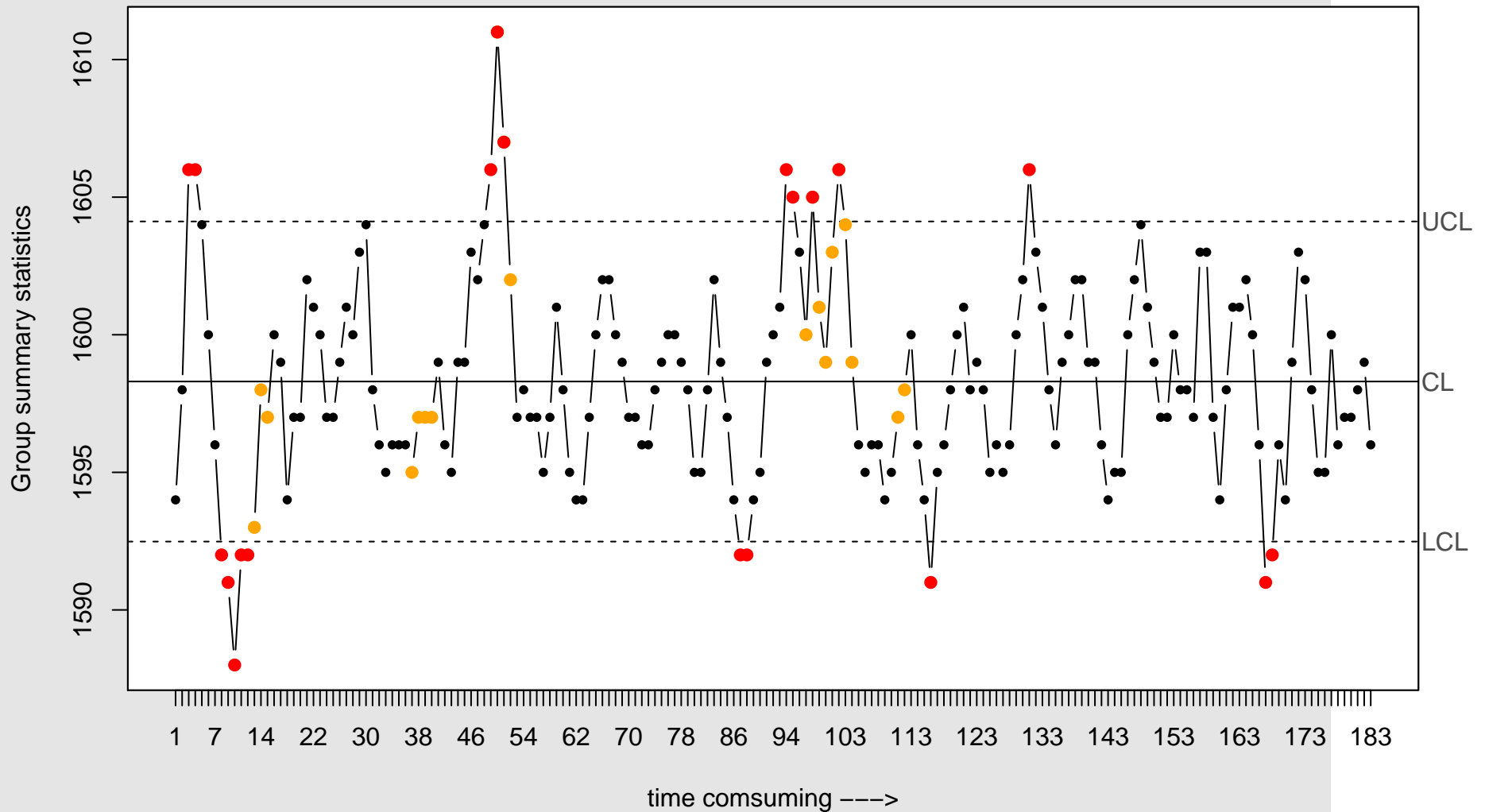LCL = 1591.011
UCL = 1602.847

Number beyond limits = 20
Number violating runs = 25

33th column point of this product

Group summary statistics

time comsuming –––>

Number of groups = 183
Center = 1598.301   LCL = 1592.485   Number beyond limits = 20
StdDev = 1.938664   UCL = 1604.117   Number violating runs = 20

34th column point of this product

Group summary statistics

time comsuming ---->
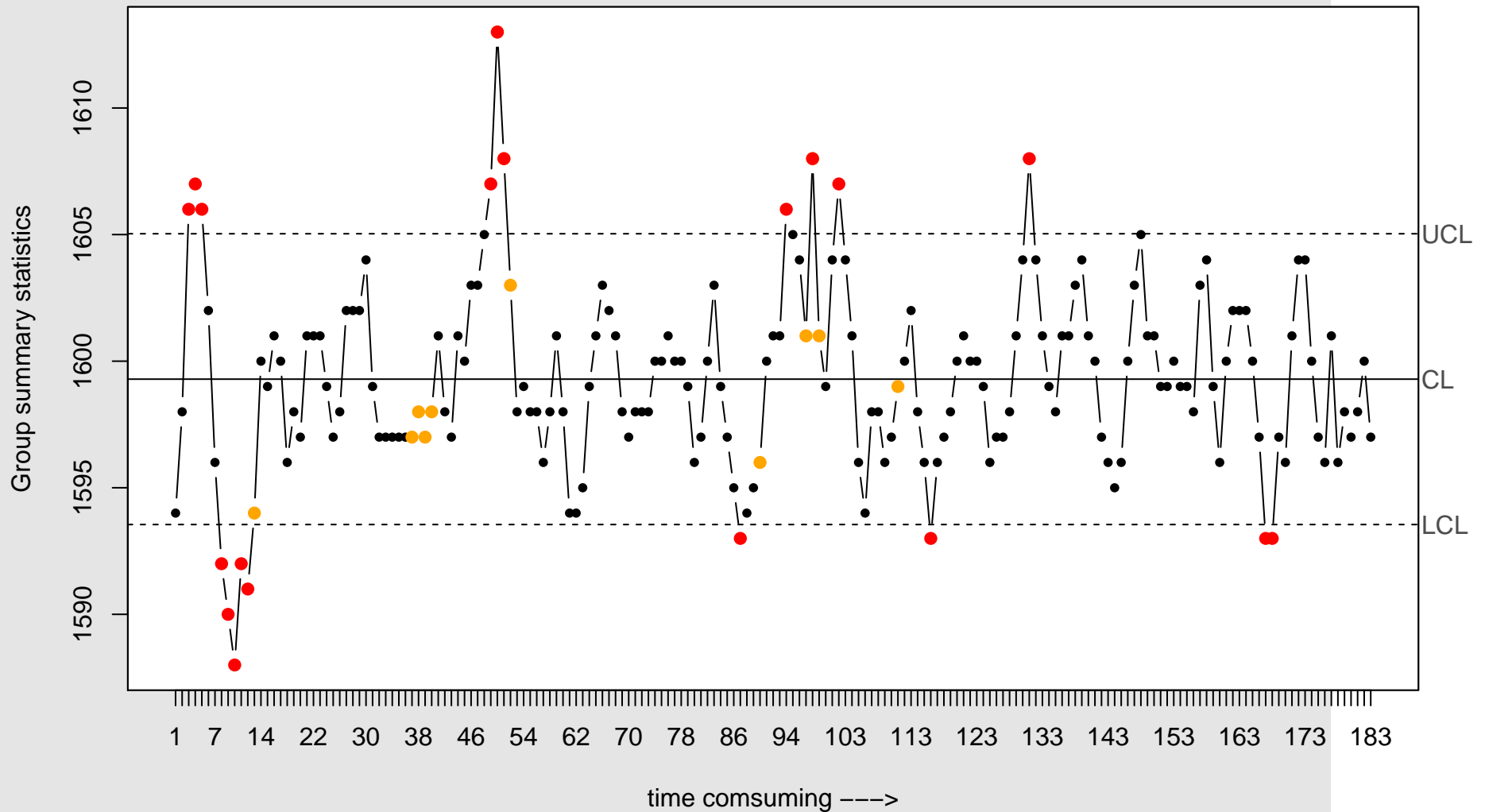
Number of groups = 183
Center = 1599.29
StdDev = 1.914309
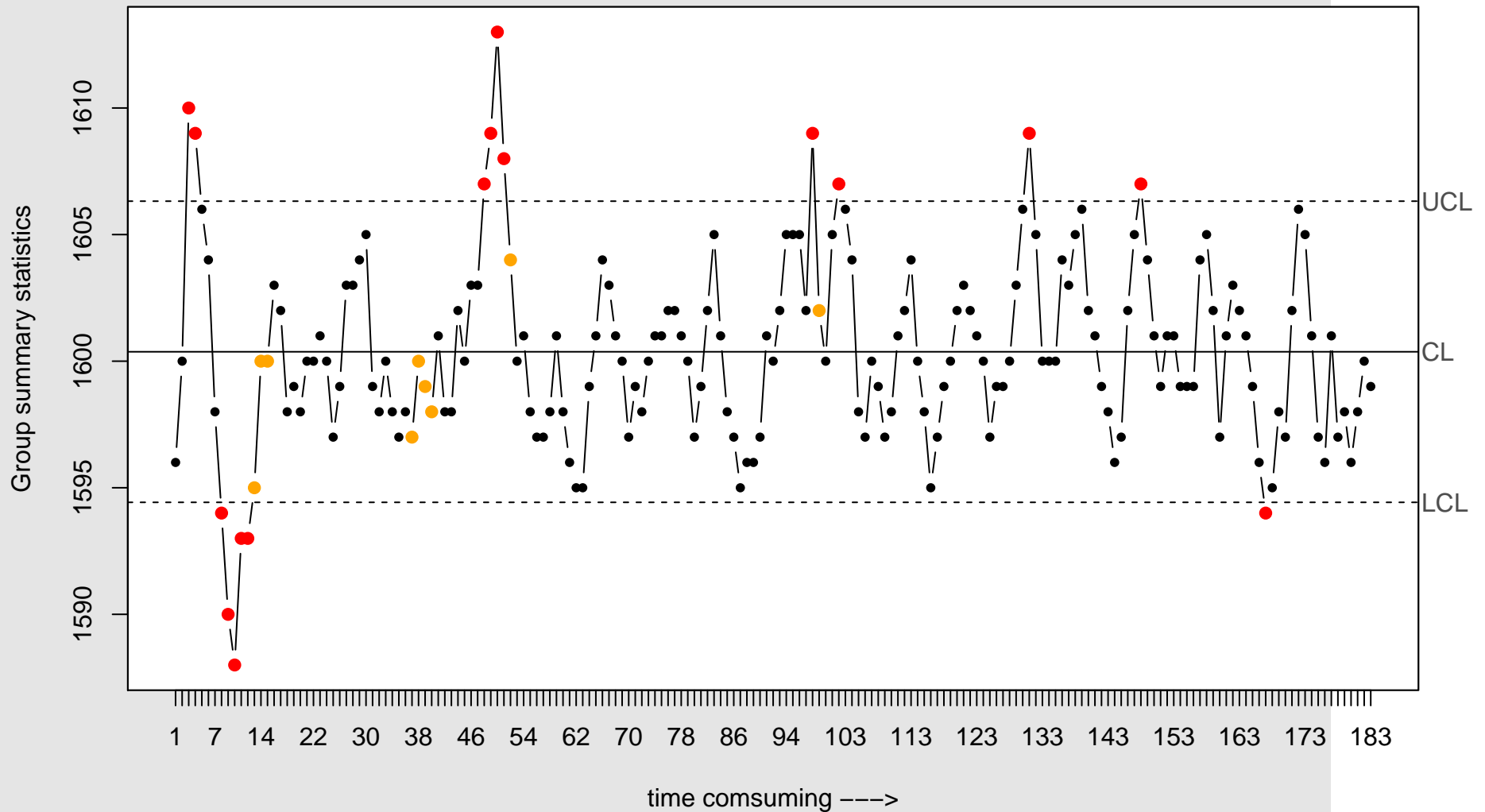
LCL = 1593.547
UCL = 1605.033

Number beyond limits = 19
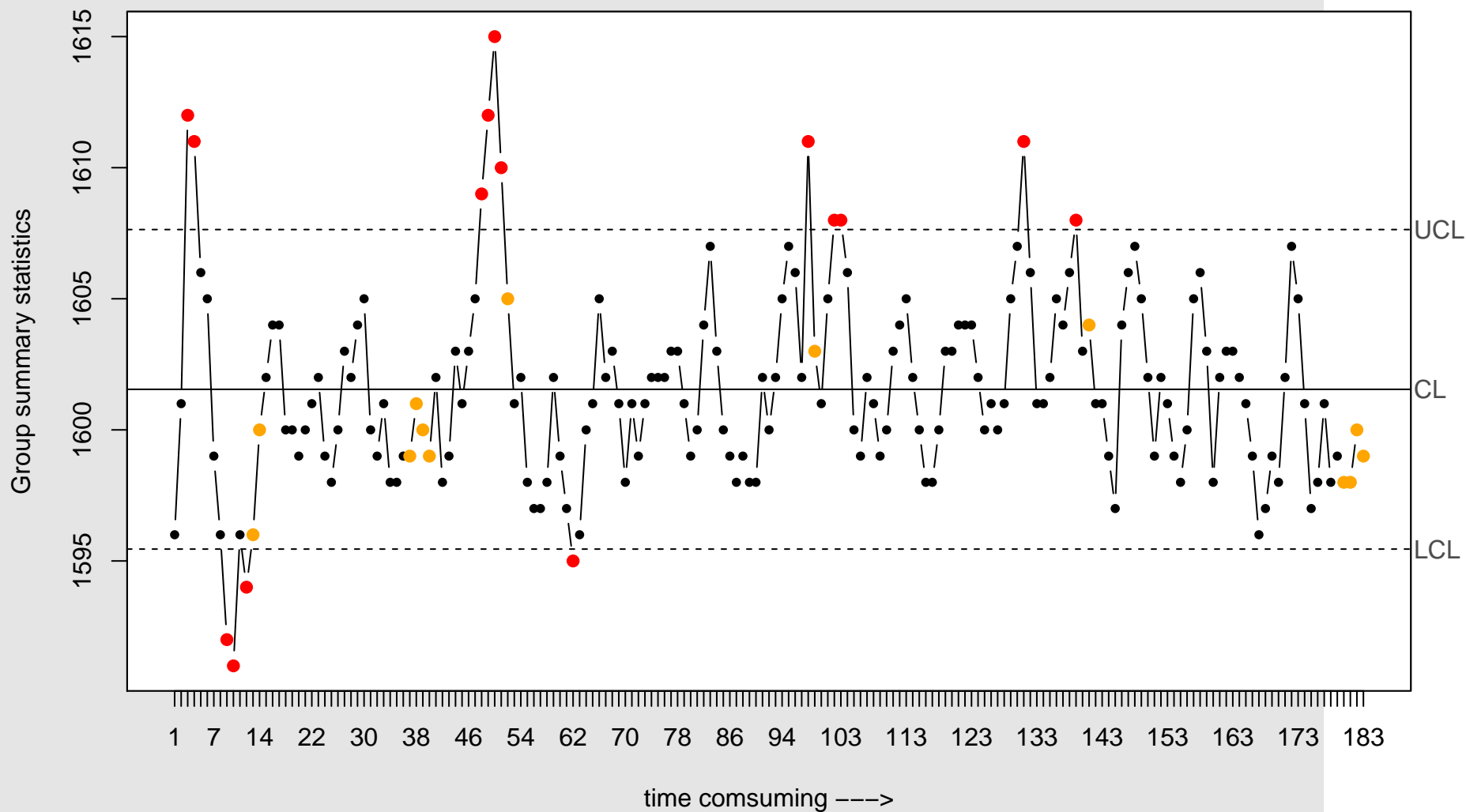Number violating runs = 13

35th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1600.372   LCL = 1594.424   Number beyond limits = 16
StdDev = 1.982503   UCL = 1606.319   Number violating runs = 9

36th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1601.546
StdDev = 2.031213
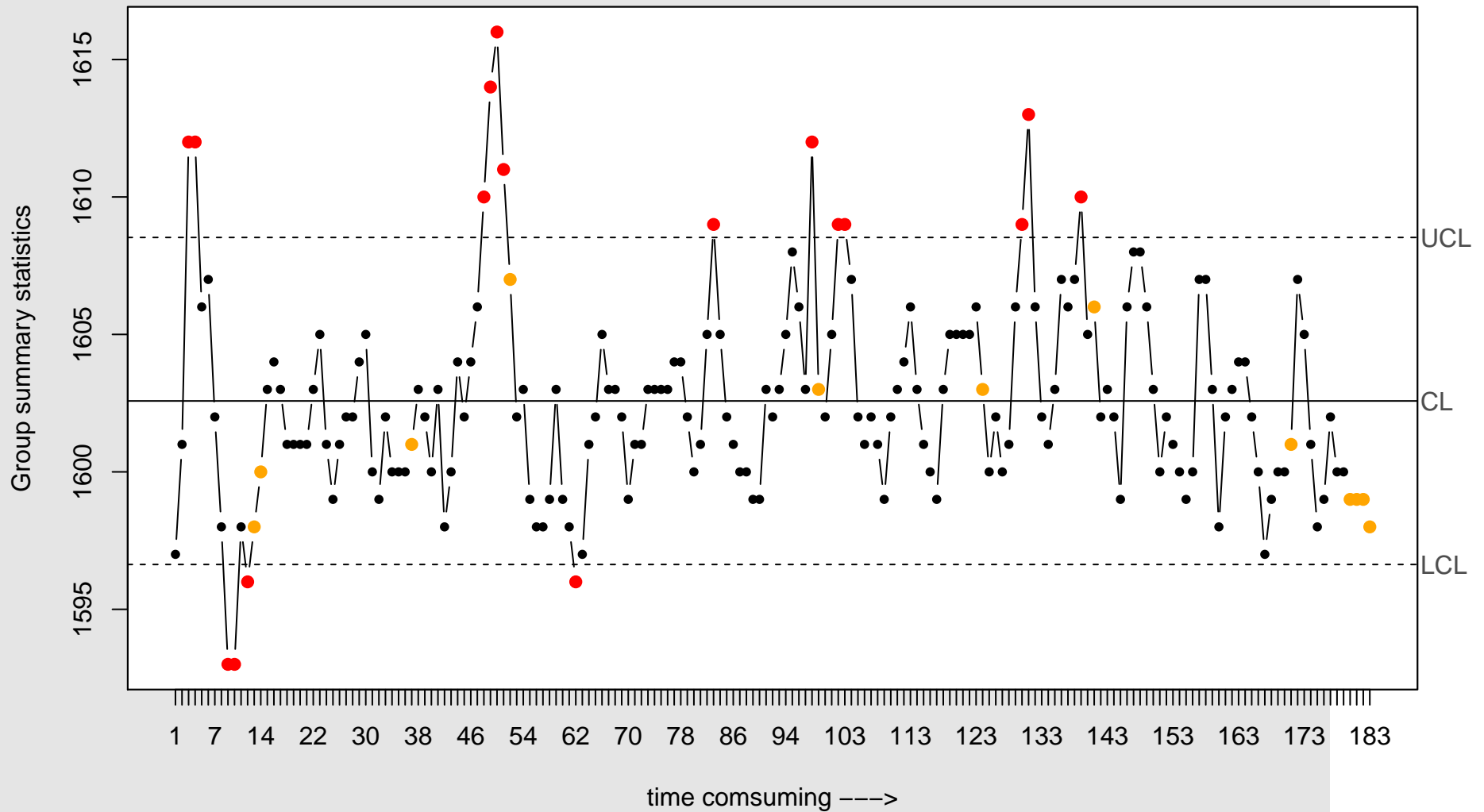
LCL = 1595.453
UCL = 1607.64

Number beyond limits = 15
Number violating runs = 13

37th column point of this product

Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1602.579
StdDev = 1.982503
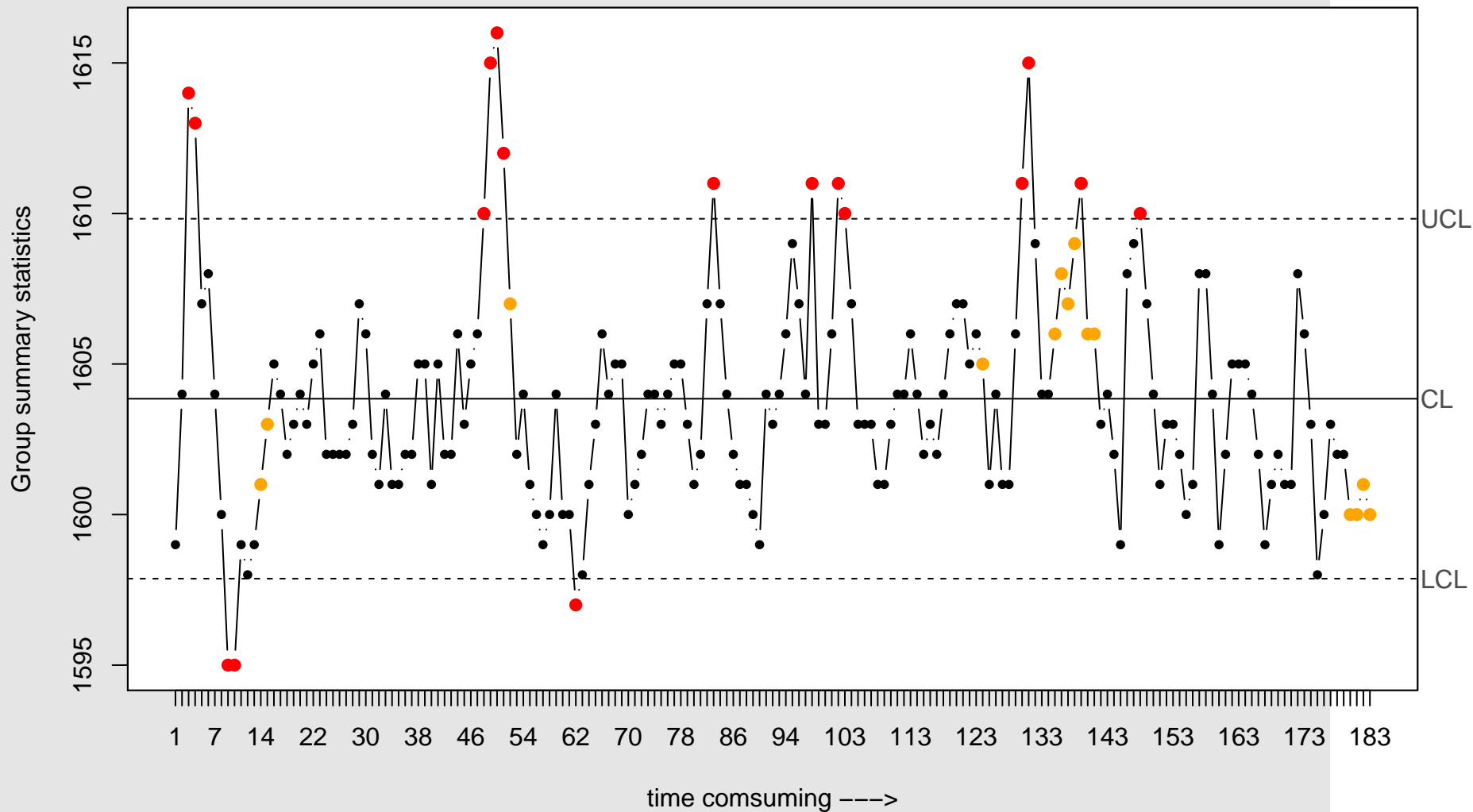
LCL = 1596.632
UCL = 1608.527

Number beyond limits = 17
Number violating runs = 12

38th column point of this product

Group summary statistics

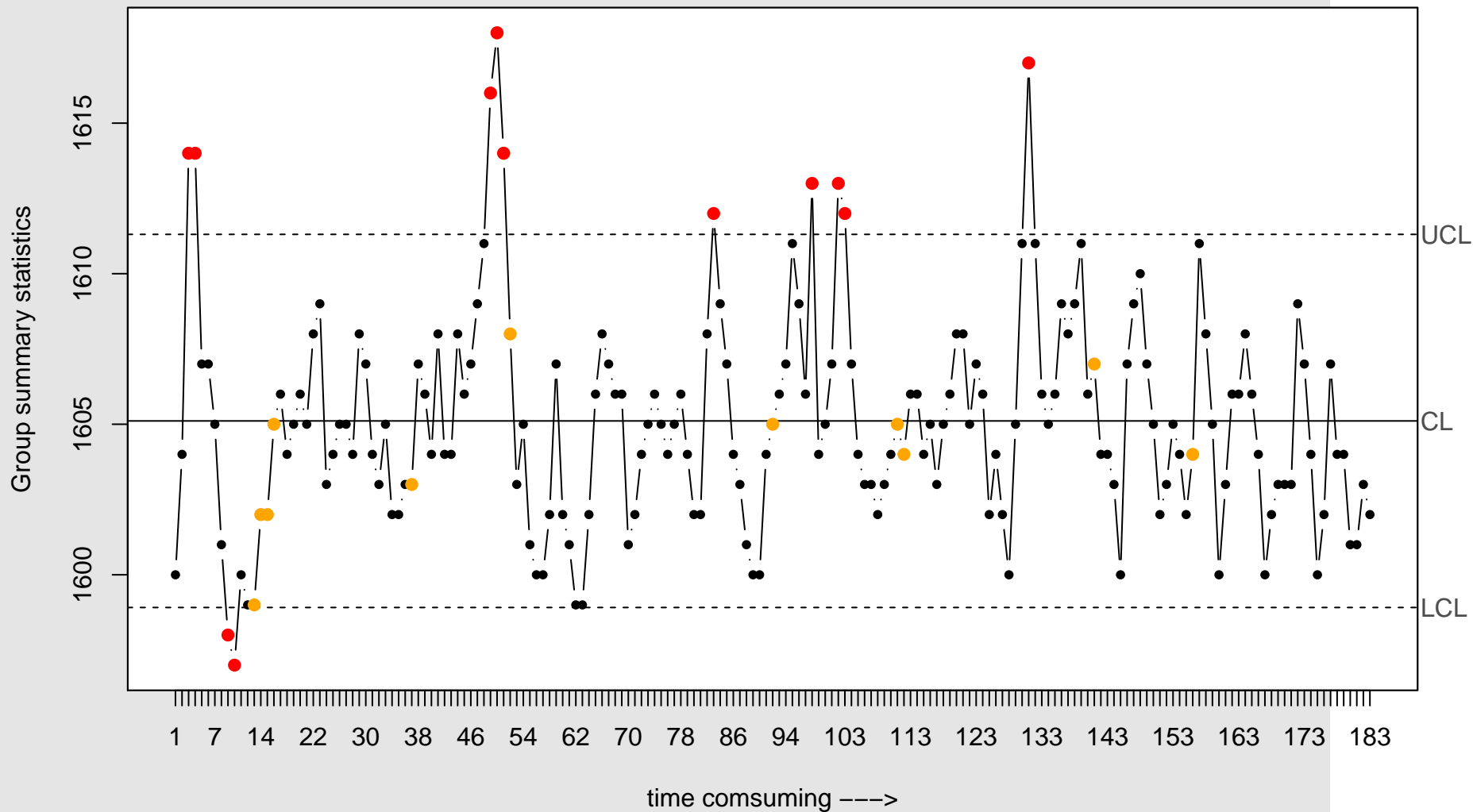time comsuming ––––>

Number of groups = 183
Center = 1603.847
StdDev = 1.992245

LCL = 1597.87
UCL = 1609.824

Number beyond limits = 17
Number violating runs = 15

39th column point of this product

Group summary statistics

UCL

CL

LCL

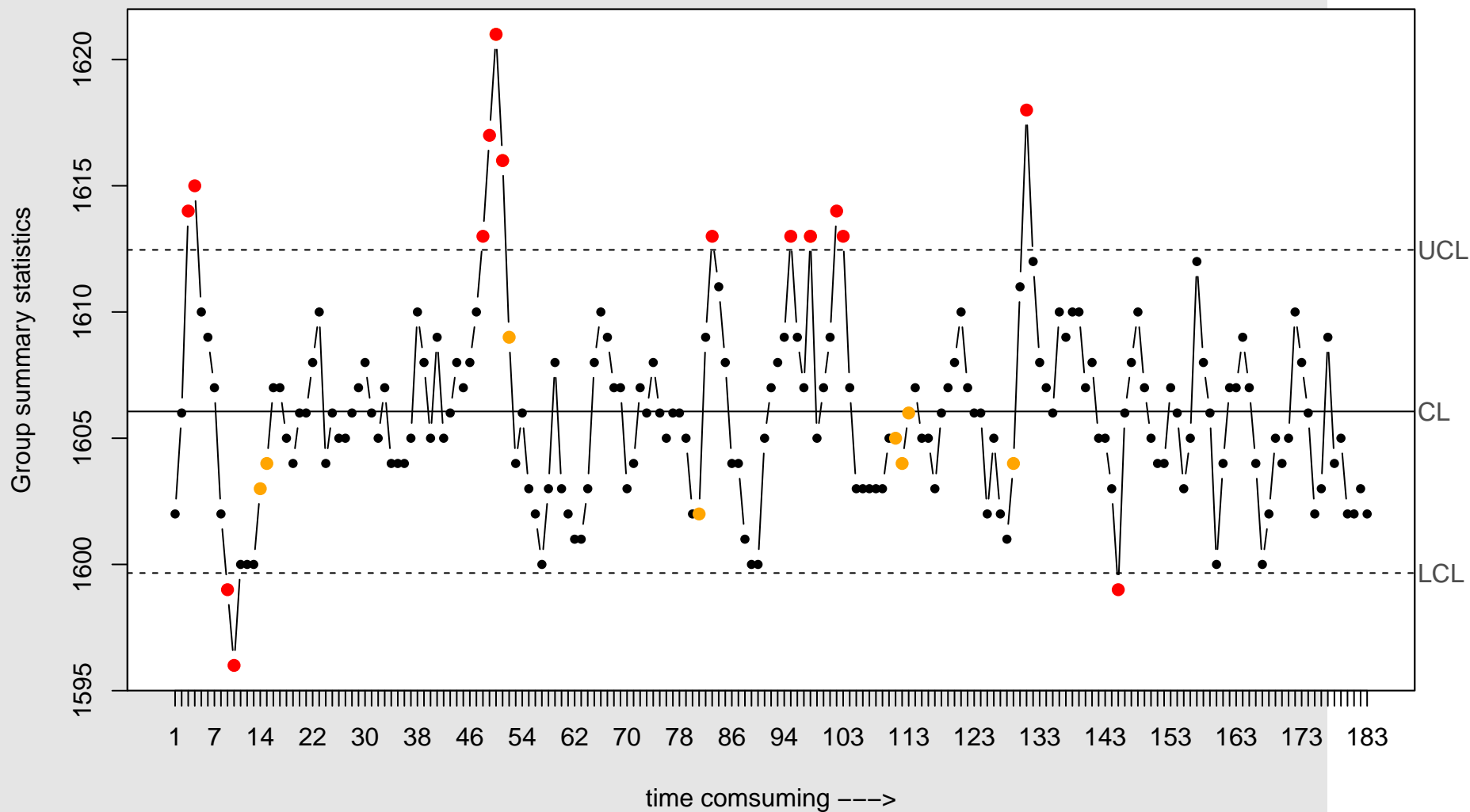time comsuming ---->

Number of groups = 183
Center = 1605.109
StdDev = 2.065311

LCL = 1598.913
UCL = 1611.305

Number beyond limits = 12
Number violating runs = 13

40th column point of this product

Group summary statistics

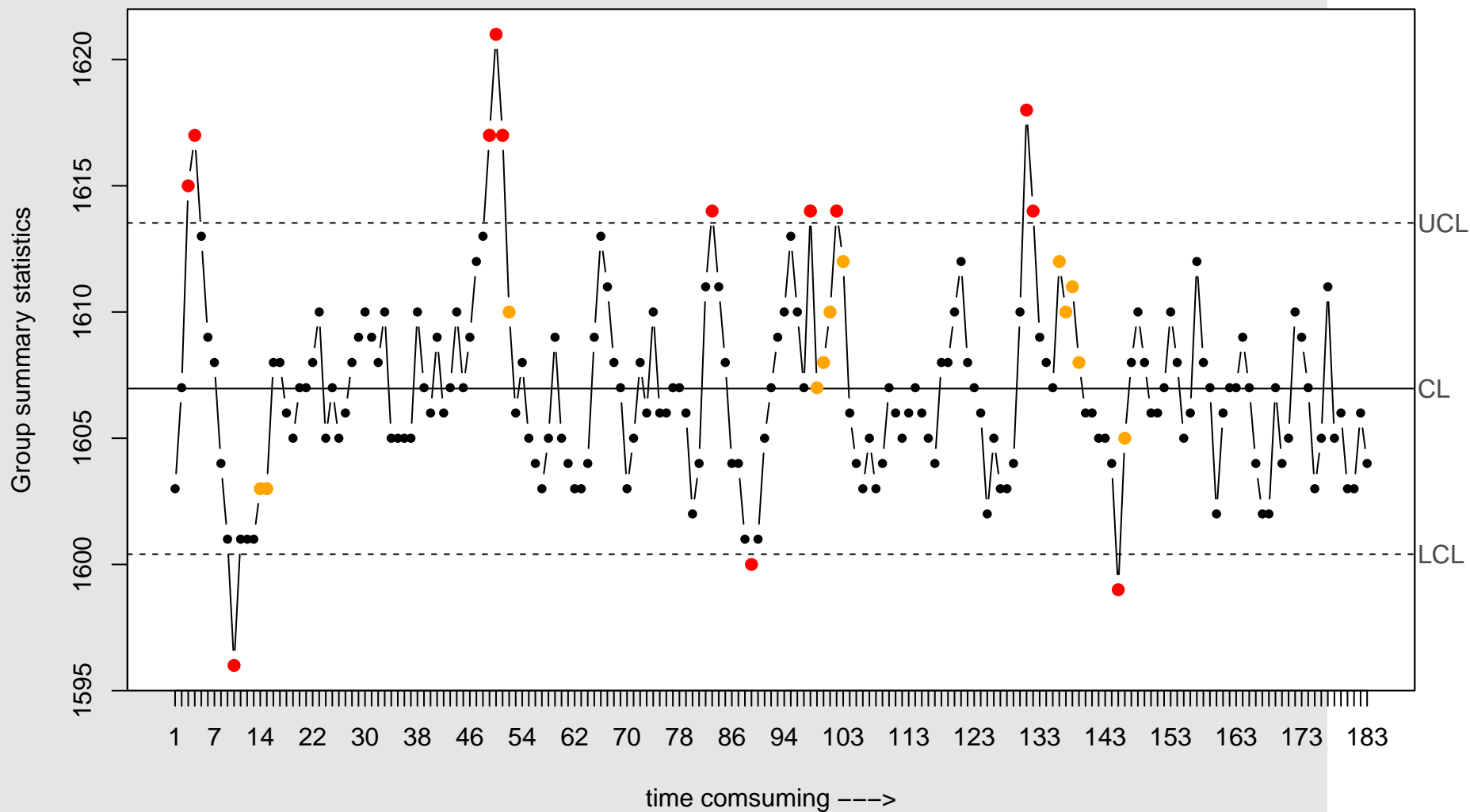time comsuming ---->

Number of groups = 183
Center = 1606.06
StdDev = 2.133505

LCL = 1599.66
UCL = 1612.461

Number beyond limits = 15
Number violating runs = 11

41th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ––––>

Number of groups = 183
Center = 1606.967   LCL = 1600.406   Number beyond limits = 13
StdDev = 2.187086   UCL = 1613.528   Number violating runs = 17

42th column point of this product

Group summary statistics

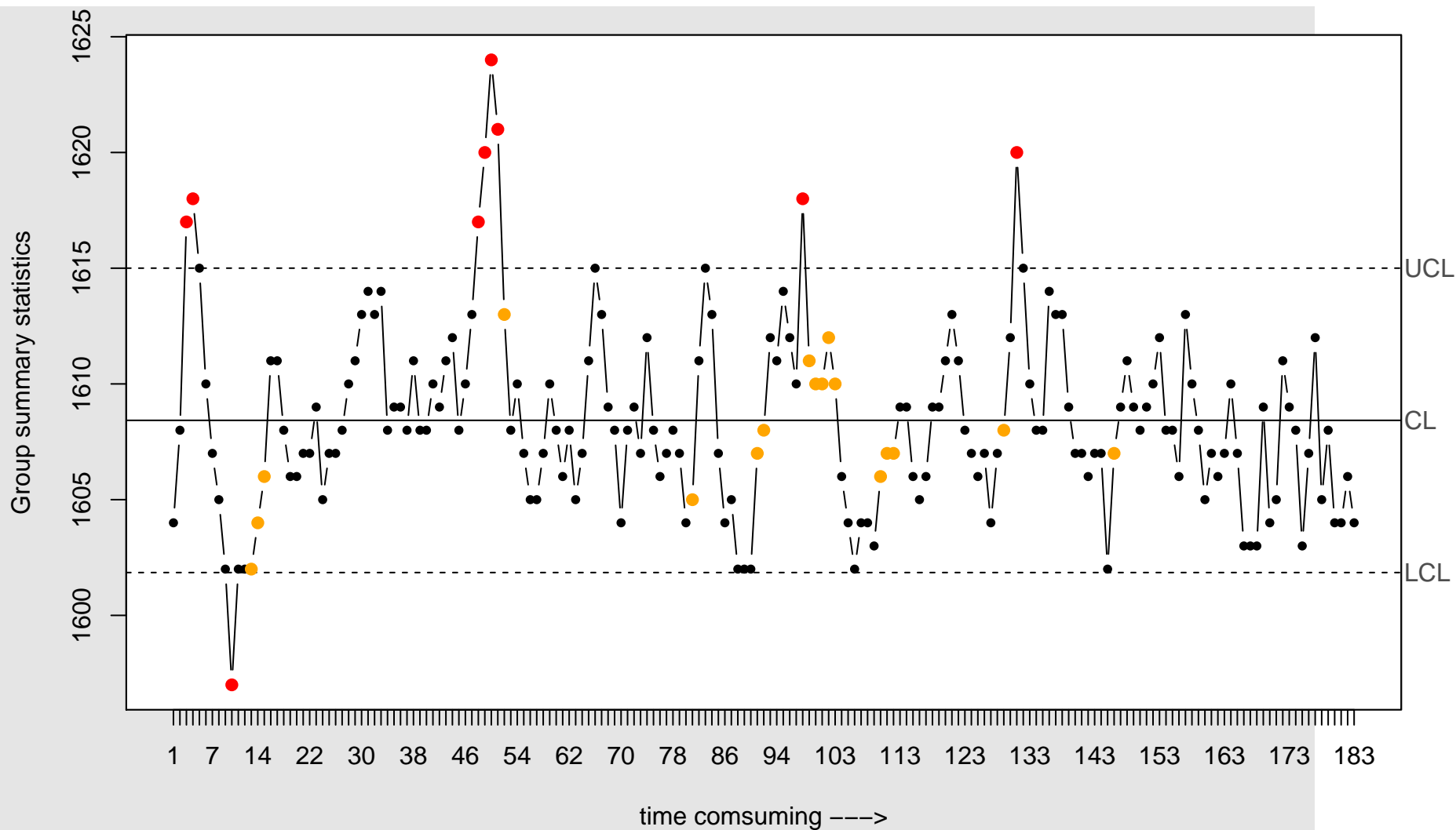time comsuming ----->
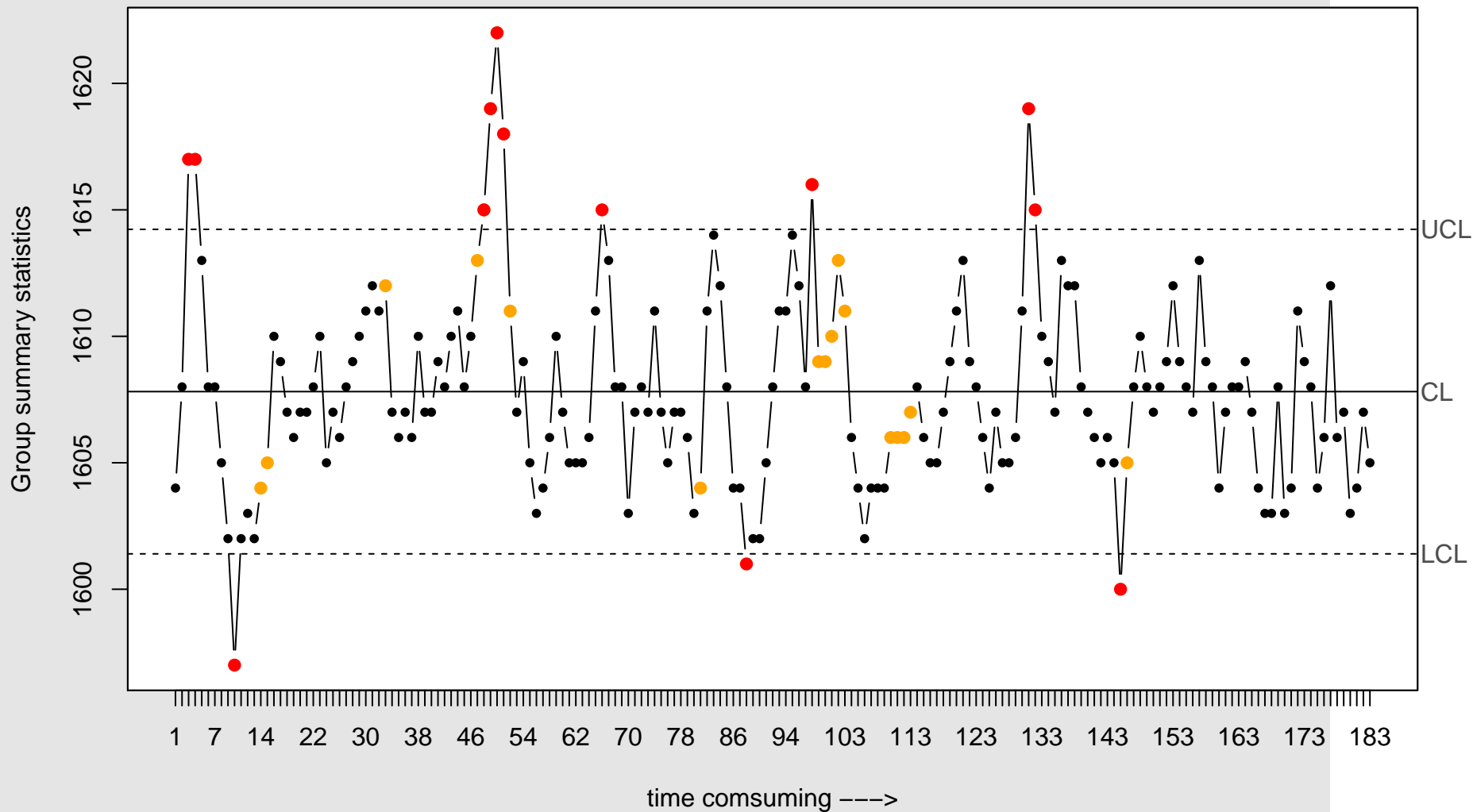
Number of groups = 183
Center = 1607.814
StdDev = 2.138376

LCL = 1601.399
UCL = 1614.229

Number beyond limits = 13
Number violating runs = 21

43th column point of this product

Group summary statistics

UCL
CL
LCL

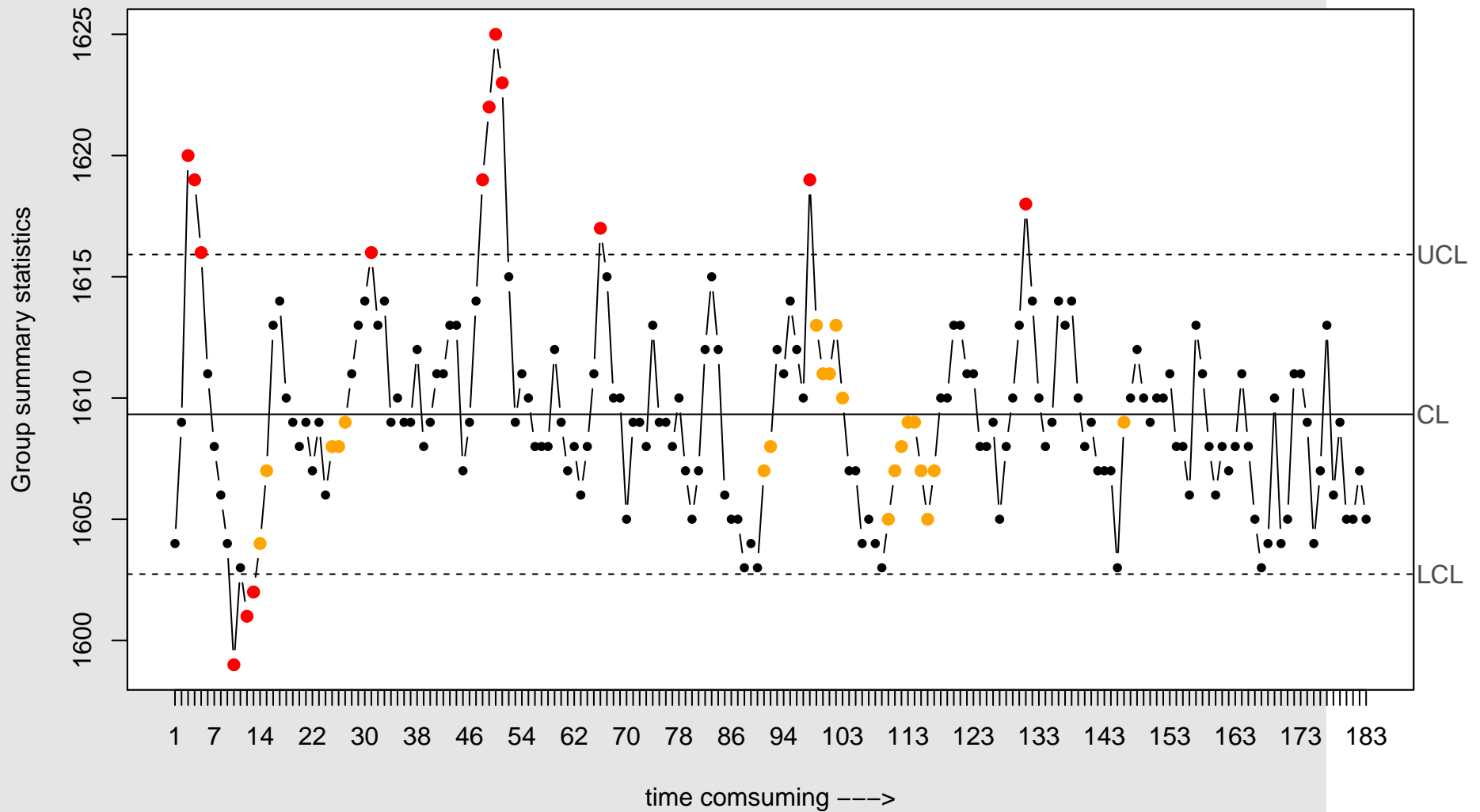time comsuming ---->

Number of groups = 183
Center = 1608.426
StdDev = 2.191957

LCL = 1601.85
UCL = 1615.002

Number beyond limits = 9
Number violating runs = 17

44th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ---->

Number of groups = 183
Center = 1609.328   LCL = 1602.737   Number beyond limits = 14
StdDev = 2.196828   UCL = 1615.918   Number violating runs = 22

45th column point of this product

Group summary statistics

time comsuming --->
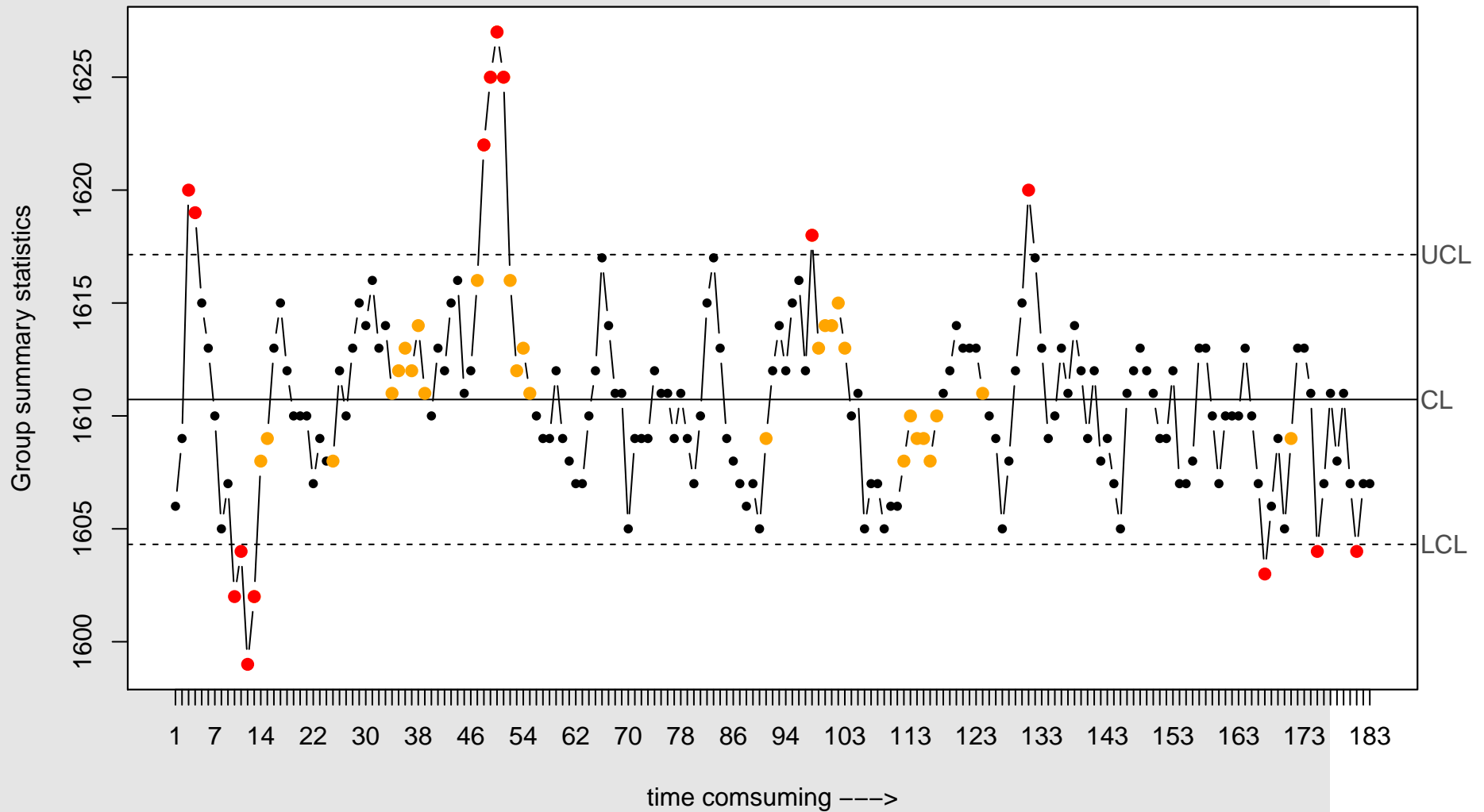
UCL
CL
LCL
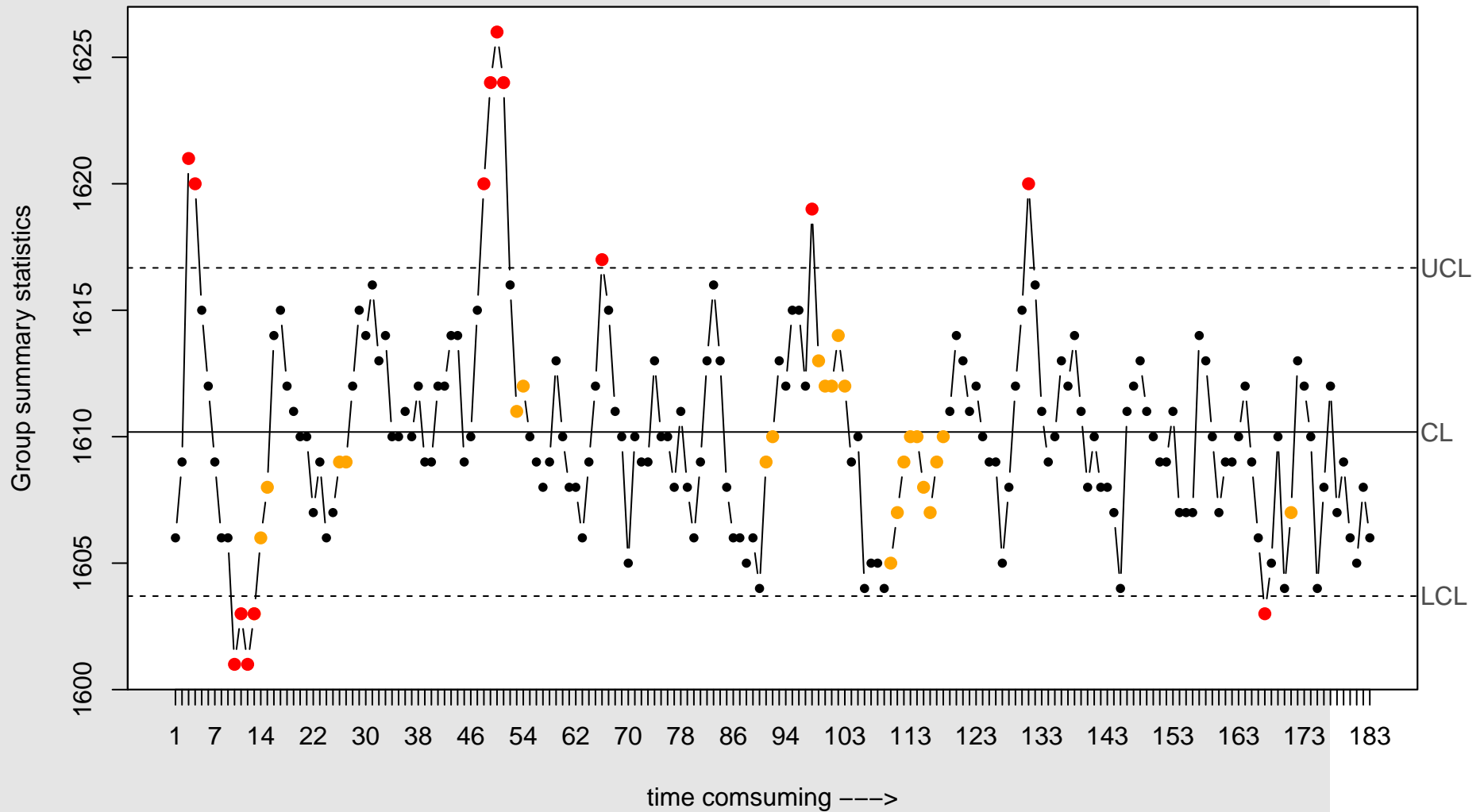
Number of groups = 183
Center = 1610.186
StdDev = 2.162731

LCL = 1603.698
UCL = 1616.674

Number beyond limits = 14
Number violating runs = 24

46th column point of this product

Group summary statistics

UCL

CL

LCL

time comsuming ---->

Number of groups = 183
Center = 1610.727   LCL = 1604.312   Number beyond limits = 15
StdDev = 2.138376   UCL = 1617.142   Number violating runs = 34

47th column point of this product

Group summary statistics

time comsuming ––––>
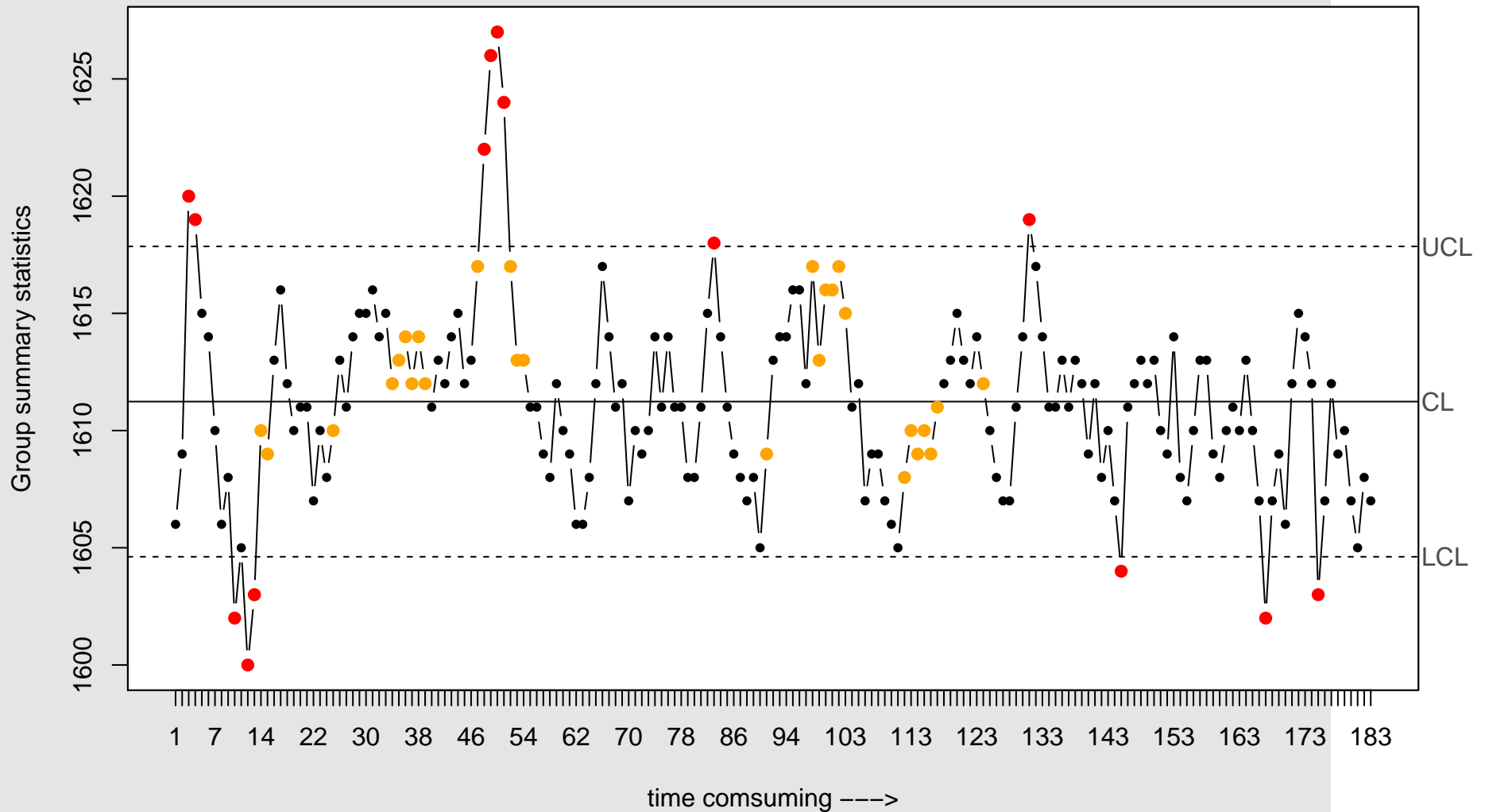
Number of groups = 183
Center = 1611.235   LCL = 1604.615   Number beyond limits = 14
StdDev = 2.20657   UCL = 1617.855   Number violating runs = 32

48th column point of this product

Group summary statistics

time comsuming ---->
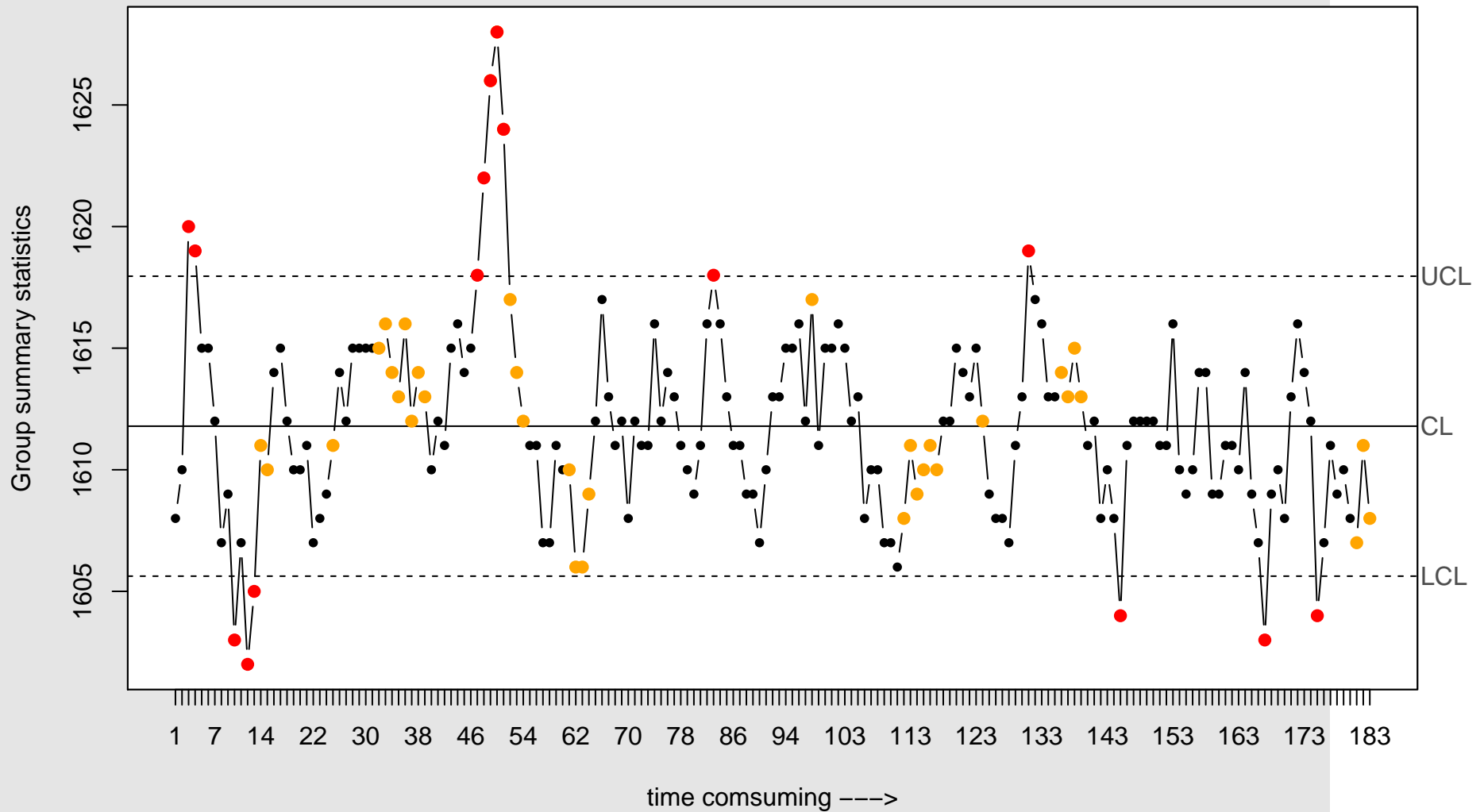
Number of groups = 183
Center = 1611.792   LCL = 1605.626   Number beyond limits = 15
StdDev = 2.055569   UCL = 1617.959   Number violating runs = 36

49th column point of this product

Group summary statistics

time comsuming ––––>
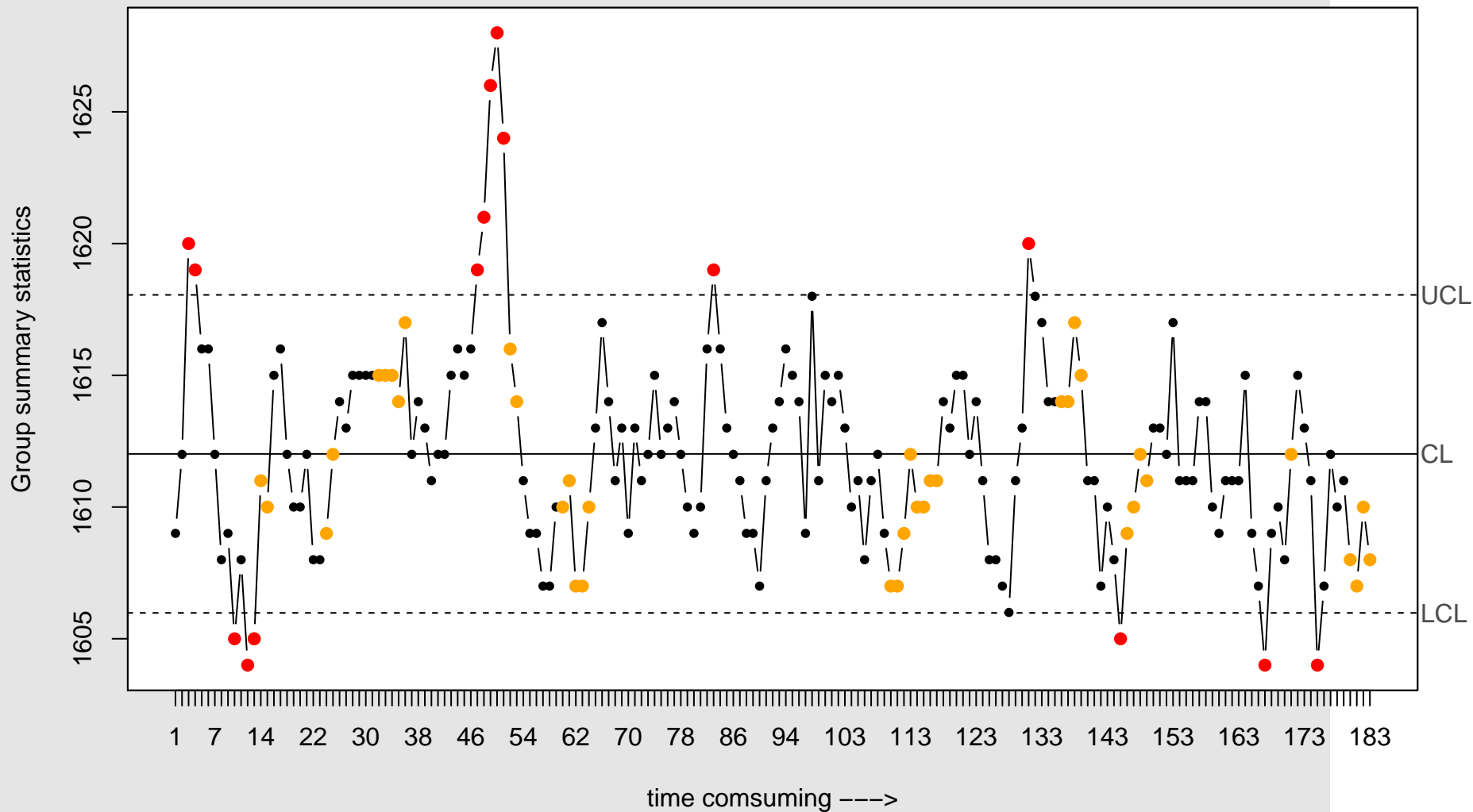
Number of groups = 183
Center = 1612.016
StdDev = 2.011729

LCL = 1605.981
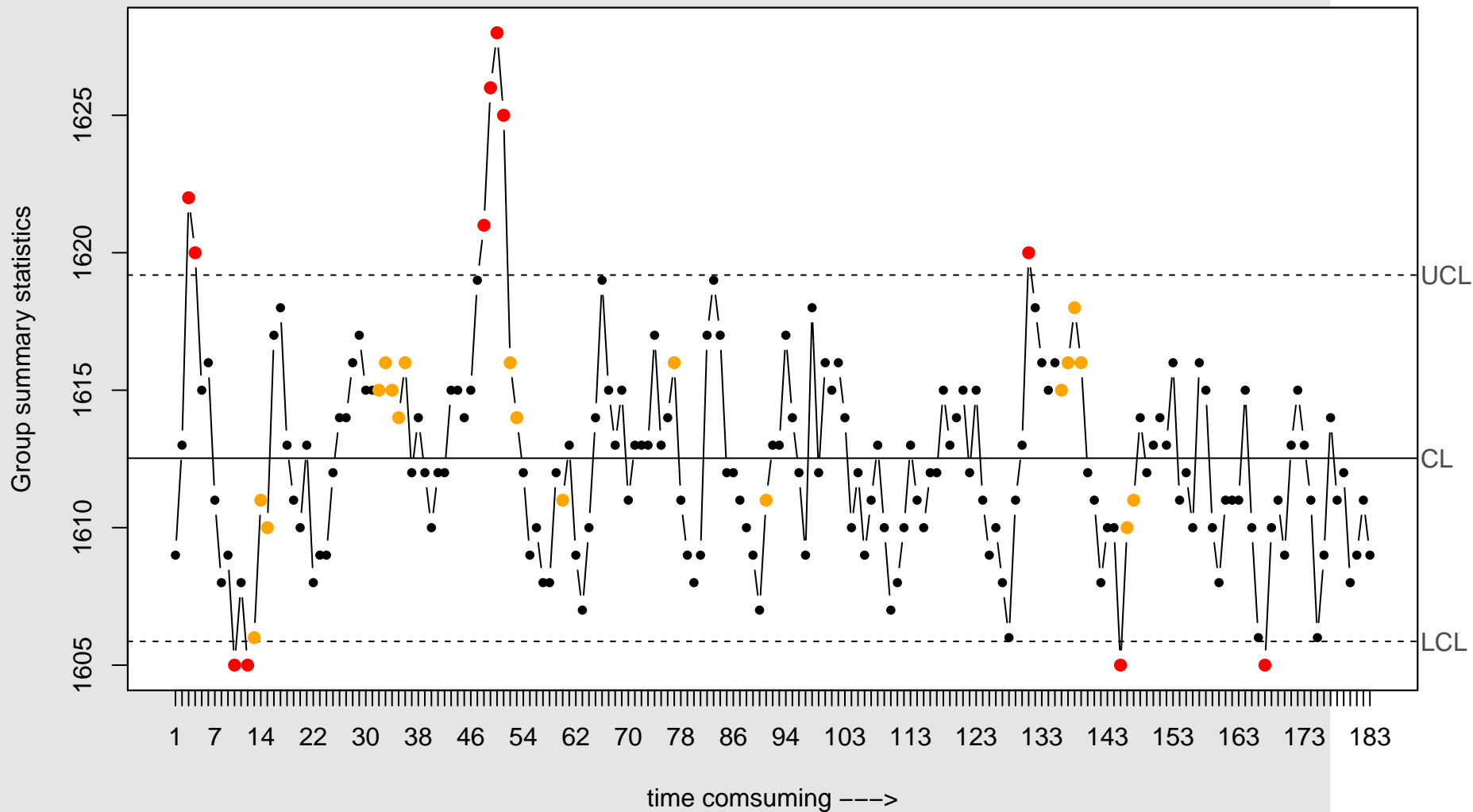UCL = 1618.052

Number beyond limits = 15
Number violating runs = 41

50th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1612.525   LCL = 1605.861   Number beyond limits = 11
StdDev = 2.221183   UCL = 1619.188   Number violating runs = 22

51th column point of this product

Group summary statistics

time comsuming ––––>
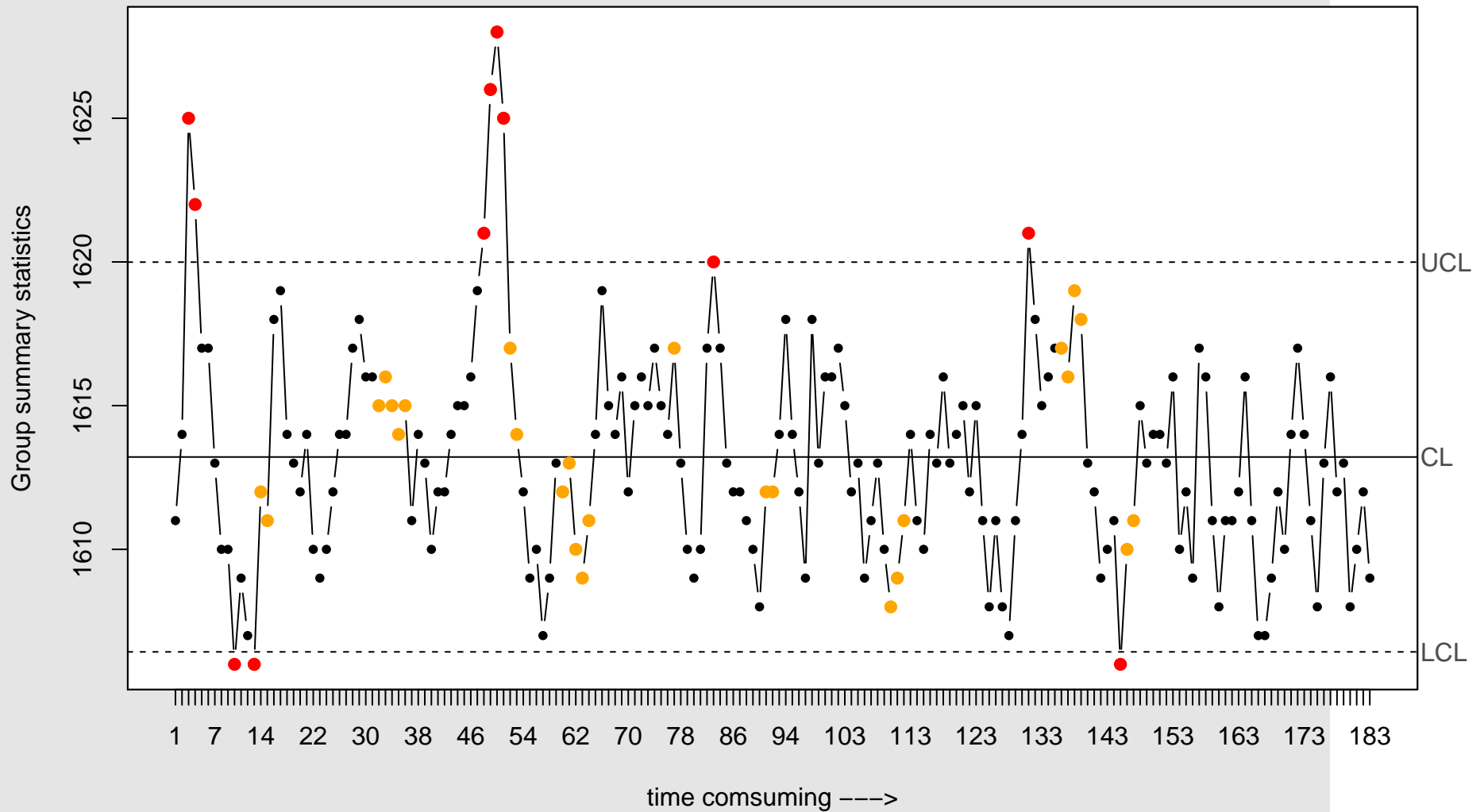
Number of groups = 183
Center = 1613.213   LCL = 1606.433   Number beyond limits = 11
StdDev = 2.260151   UCL = 1619.994   Number violating runs = 30

52th column point of this product

Group summary statistics

UCL

CL

LCL

time comsuming ---->
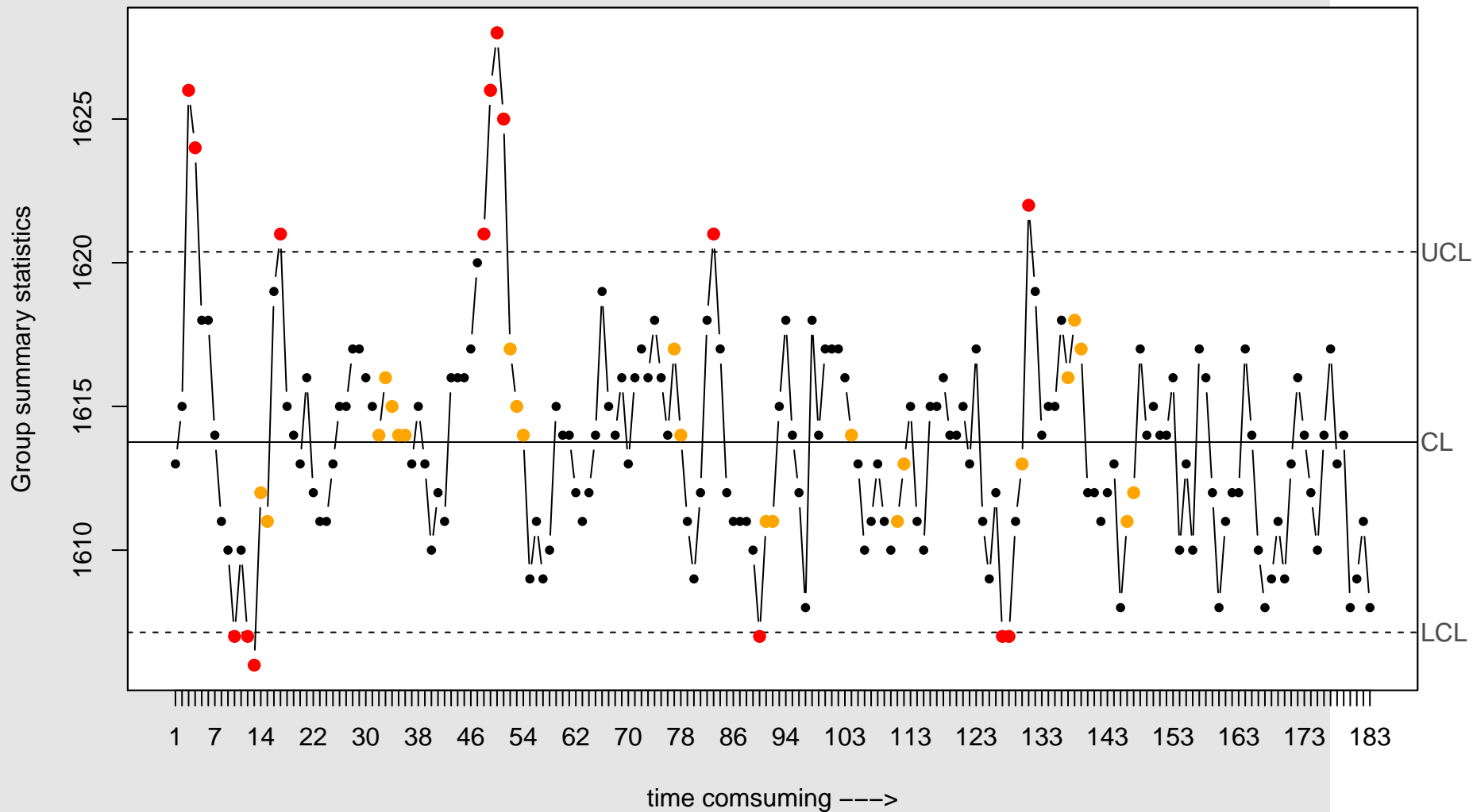
Number of groups = 183
Center = 1613.76   LCL = 1607.14   Number beyond limits = 15
StdDev = 2.20657   UCL = 1620.379   Number violating runs = 26

53th column point of this product

Group summary statistics

time comsuming ---->
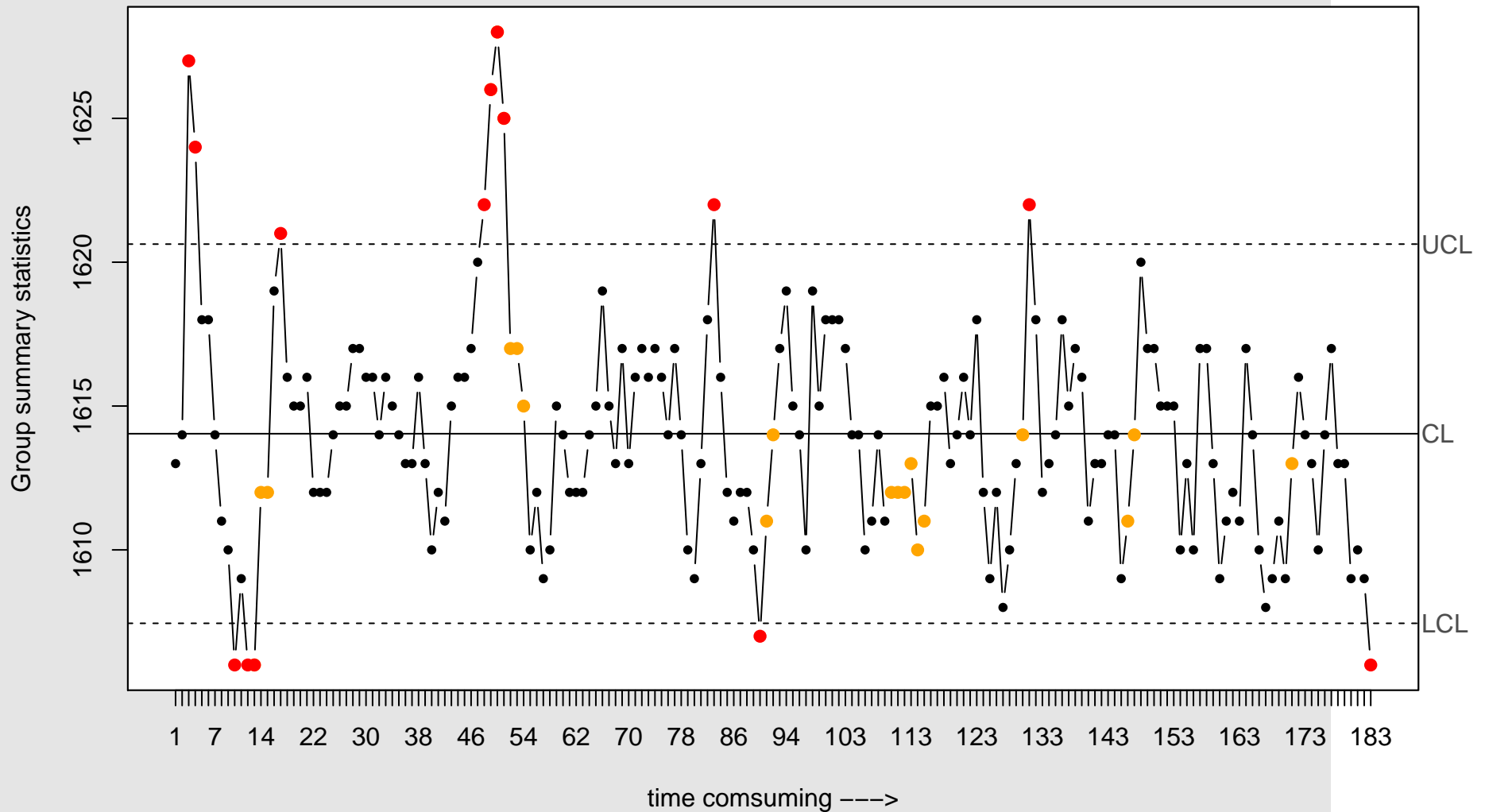
Number of groups = 183
Center = 1614.038   LCL = 1607.448   Number beyond limits = 14
StdDev = 2.196828   UCL = 1620.629   Number violating runs = 21

54th column point of this product

Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1614.393   LCL = 1607.701   Number beyond limits = 10
StdDev = 2.230925   UCL = 1621.086   Number violating runs = 23

55th column point of this product

Group summary statistics

time comsuming --->

UCL

CL

LCL

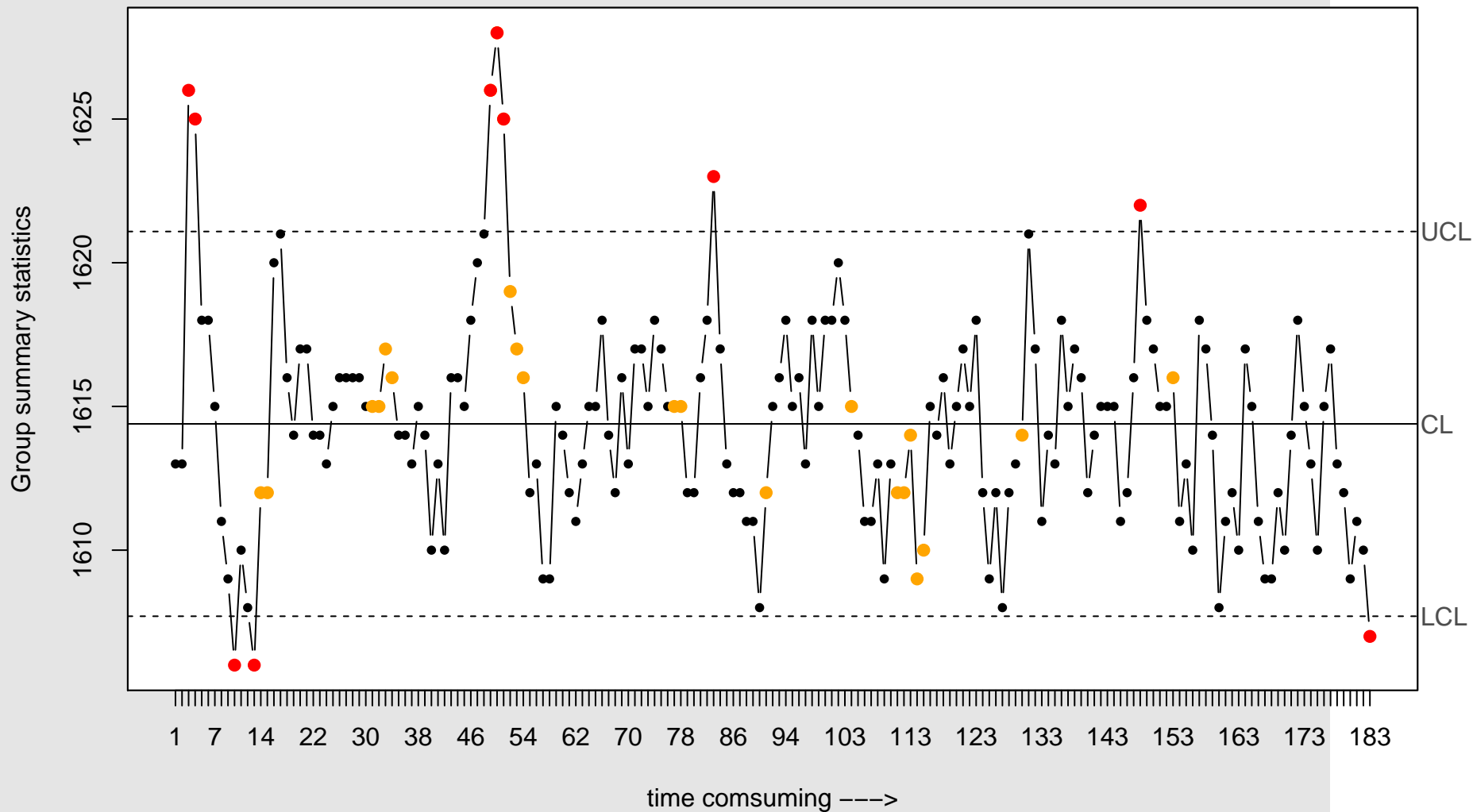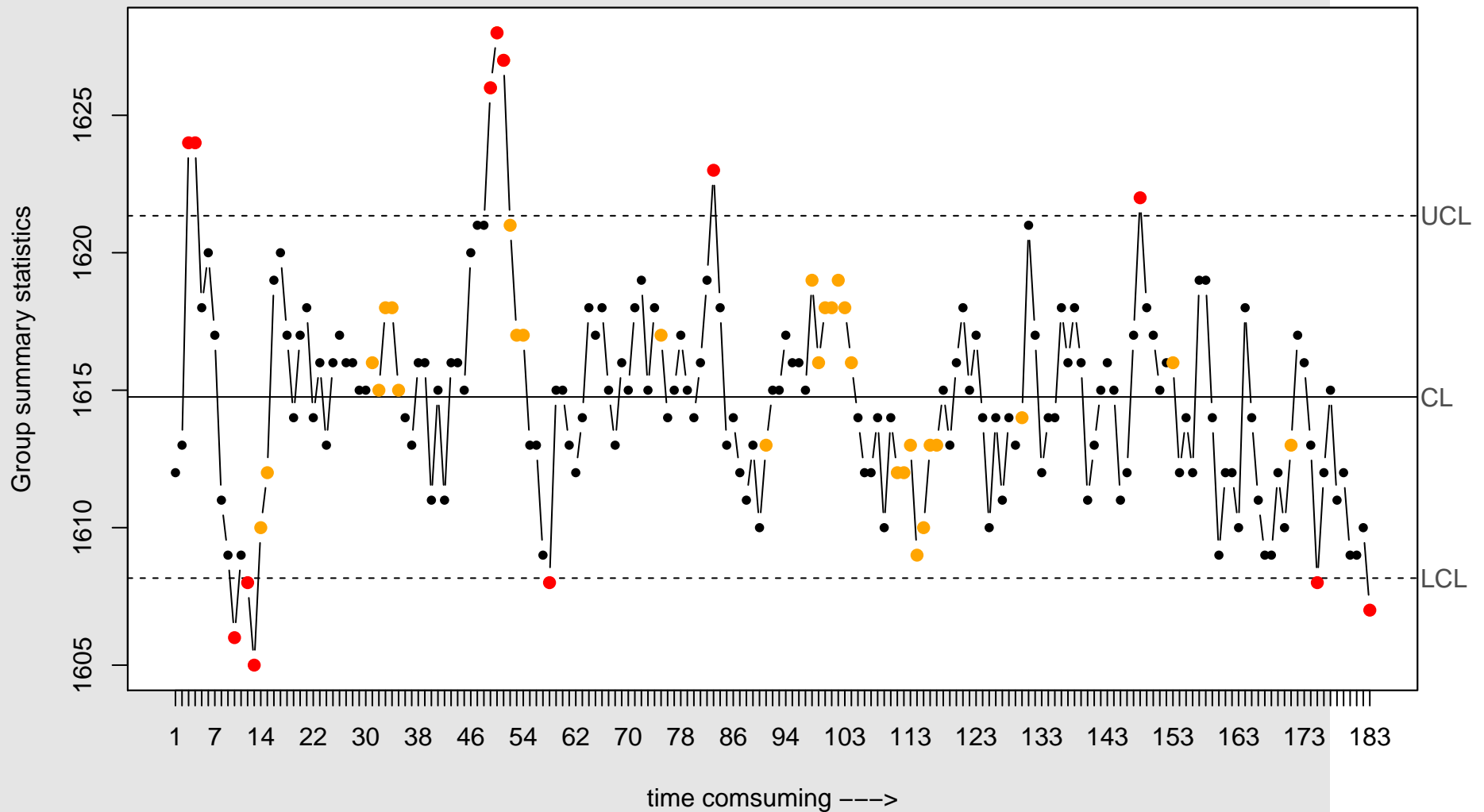Number of groups = 183
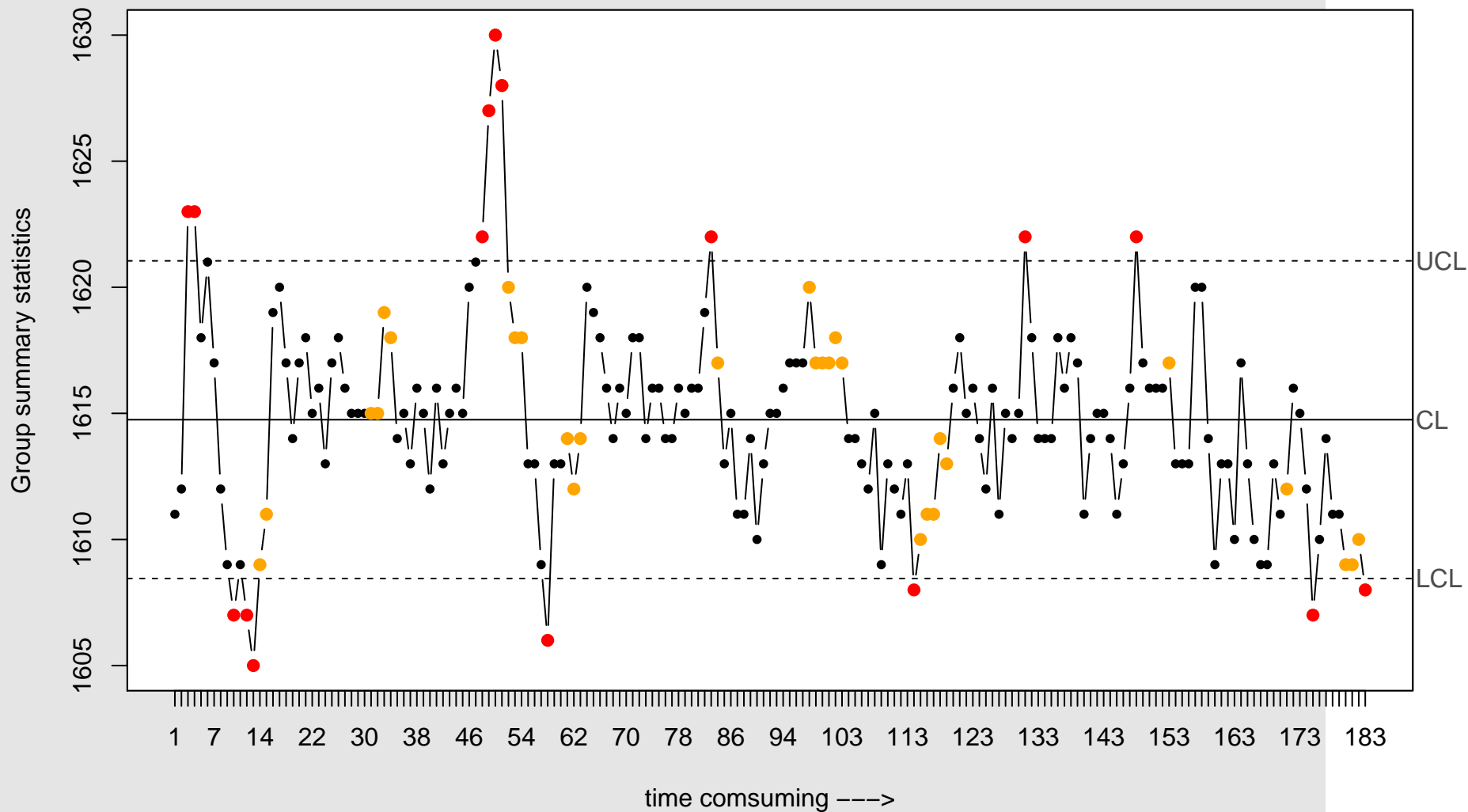Center = 1614.754
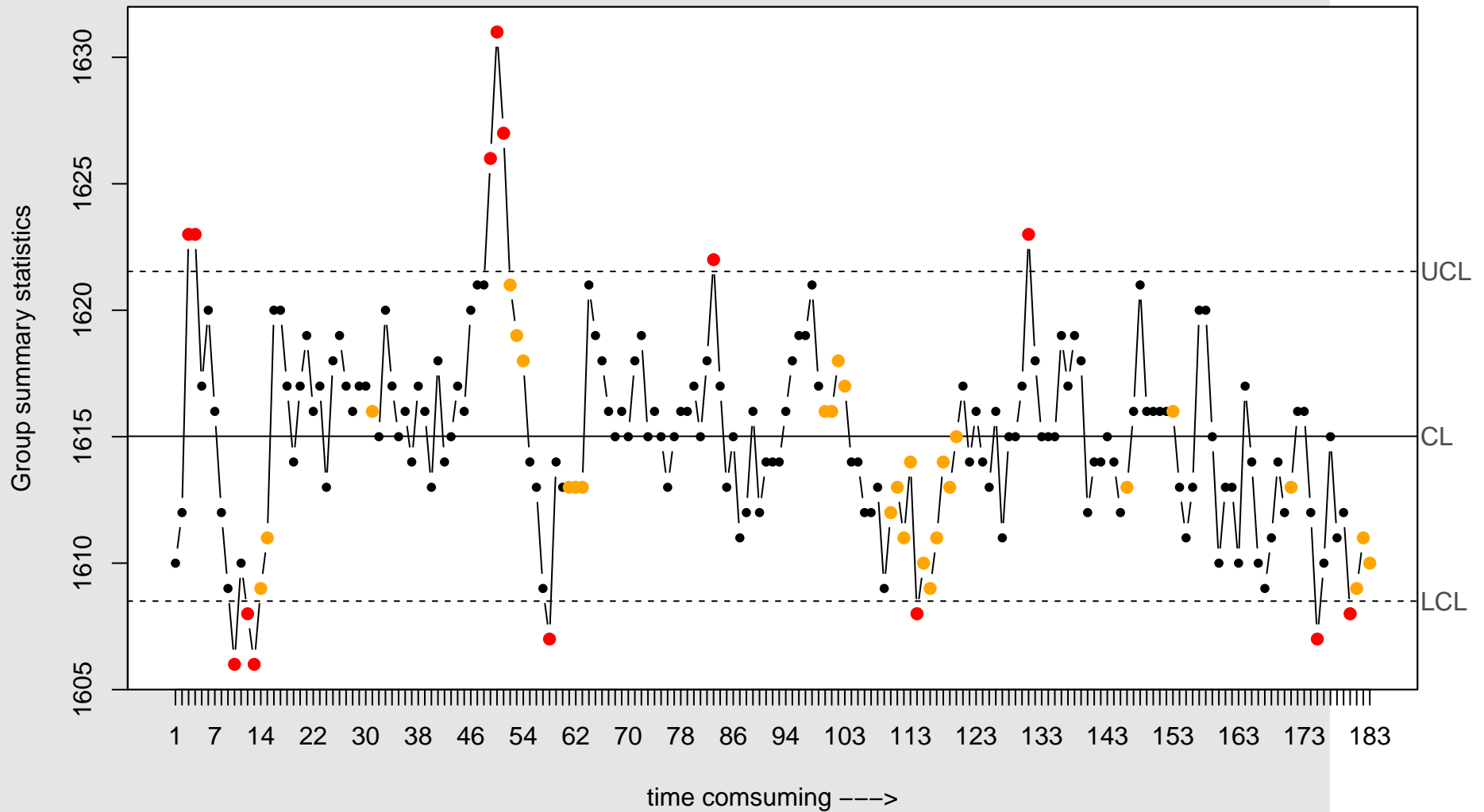StdDev = 2.196828

LCL = 1608.164
UCL = 1621.345

Number beyond limits = 13
Number violating runs = 32

56th column point of this product

Number of groups = 183
Center = 1614.749   LCL = 1608.45   Number beyond limits = 16
StdDev = 2.099408   UCL = 1621.047   Number violating runs = 33

57th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1615.016   LCL = 1608.499   Number beyond limits = 14
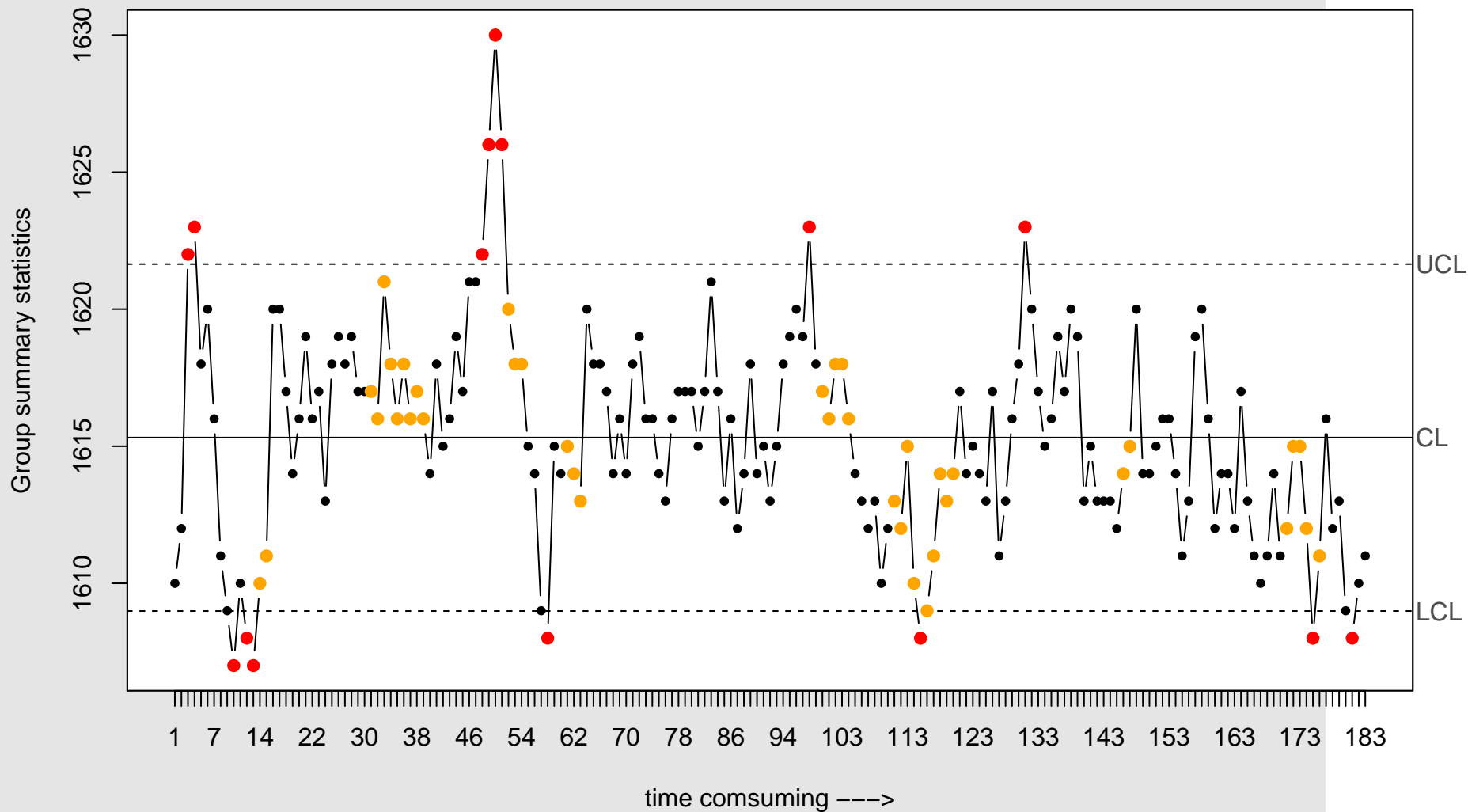StdDev = 2.172473   UCL = 1621.534   Number violating runs = 33

58th column point of this product

Number of groups = 183
Center = 1615.317   LCL = 1608.989   Number beyond limits = 15
StdDev = 2.10915   UCL = 1621.644   Number violating runs = 43

59th column point of this product

Group summary statistics

1630
1625
1620
1615
1610

UCL
CL
LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ---->

Number of groups = 183
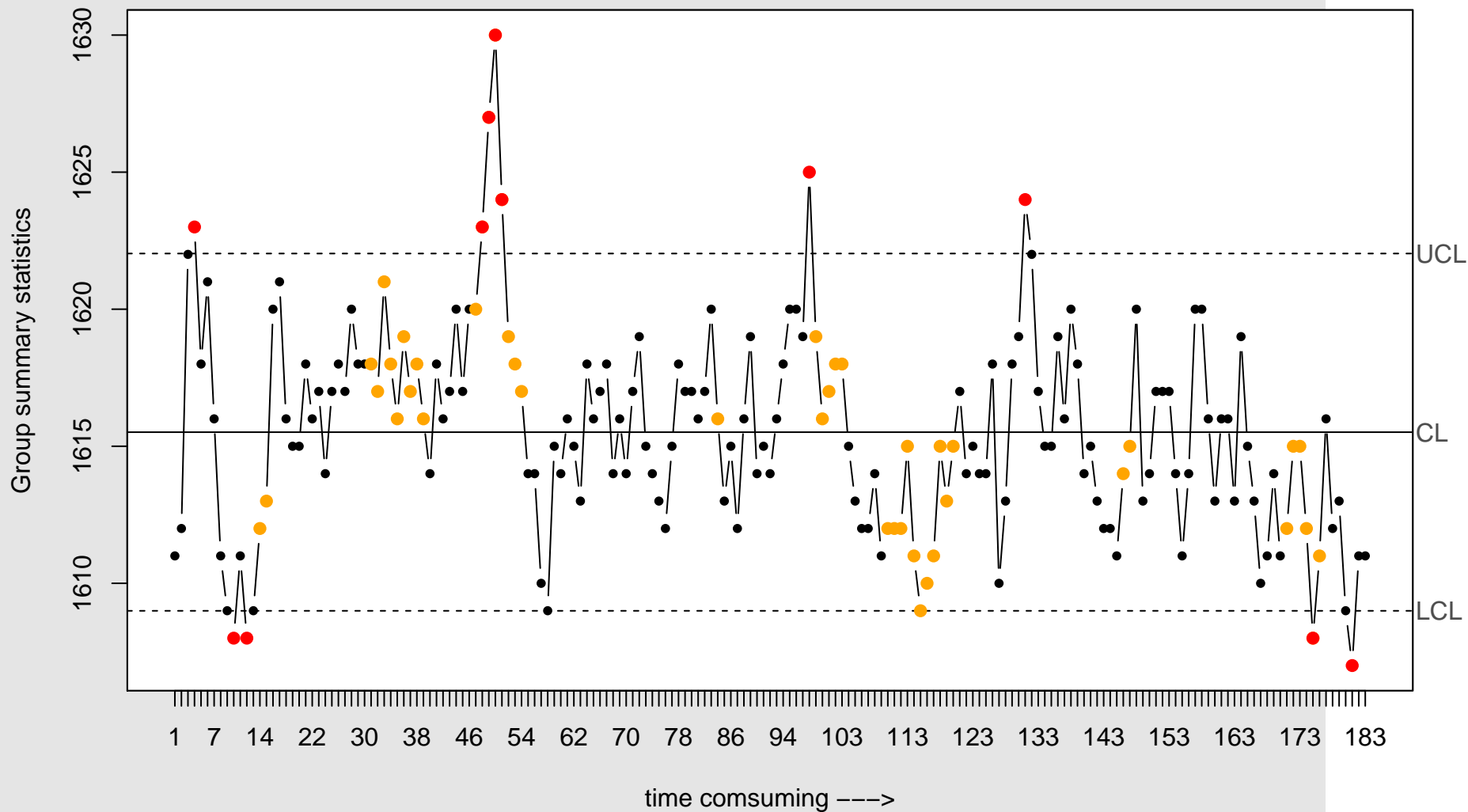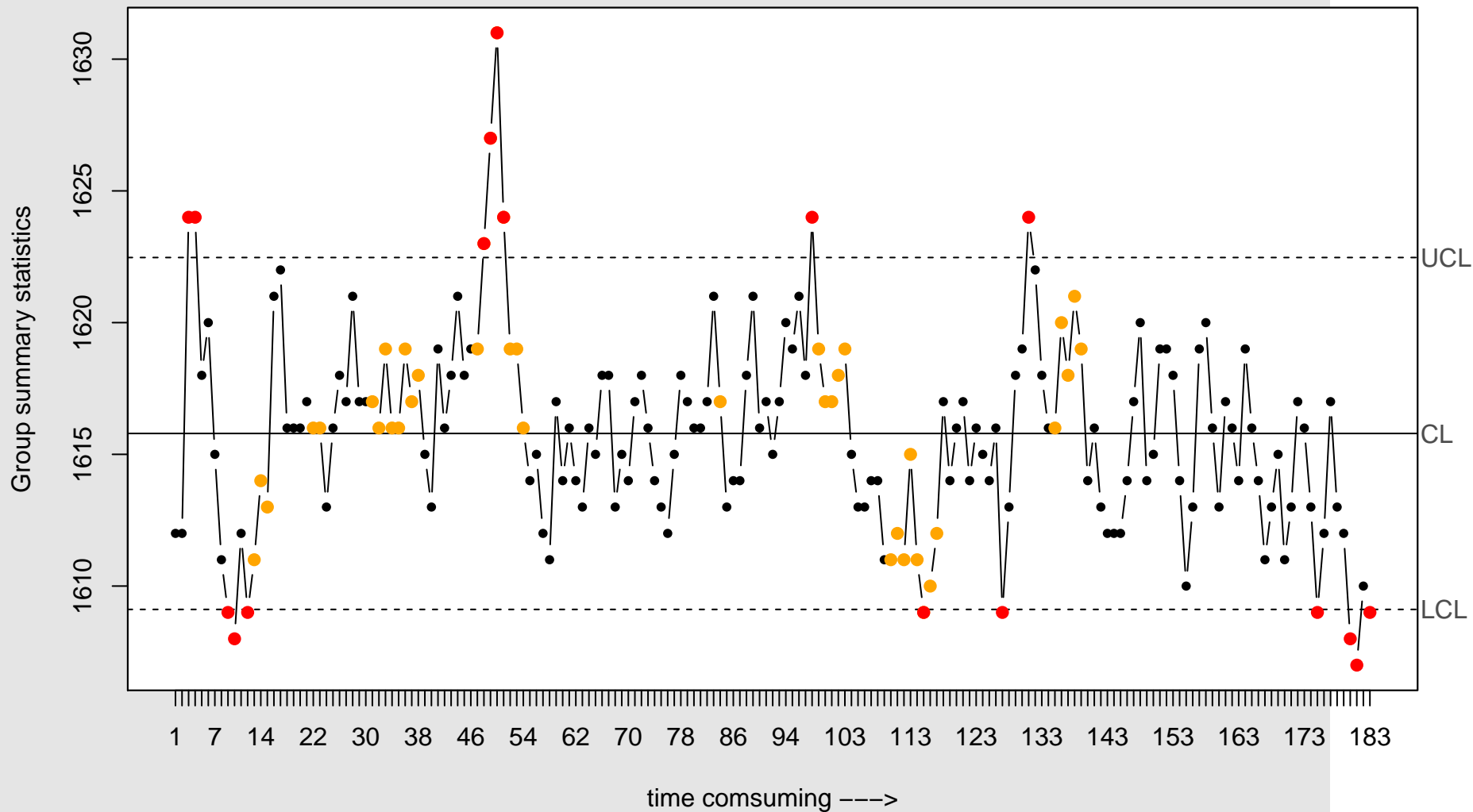Center = 1615.514
StdDev = 2.172473

LCL = 1608.996
UCL = 1622.031

Number beyond limits = 11
Number violating runs = 44

60th column point of this product

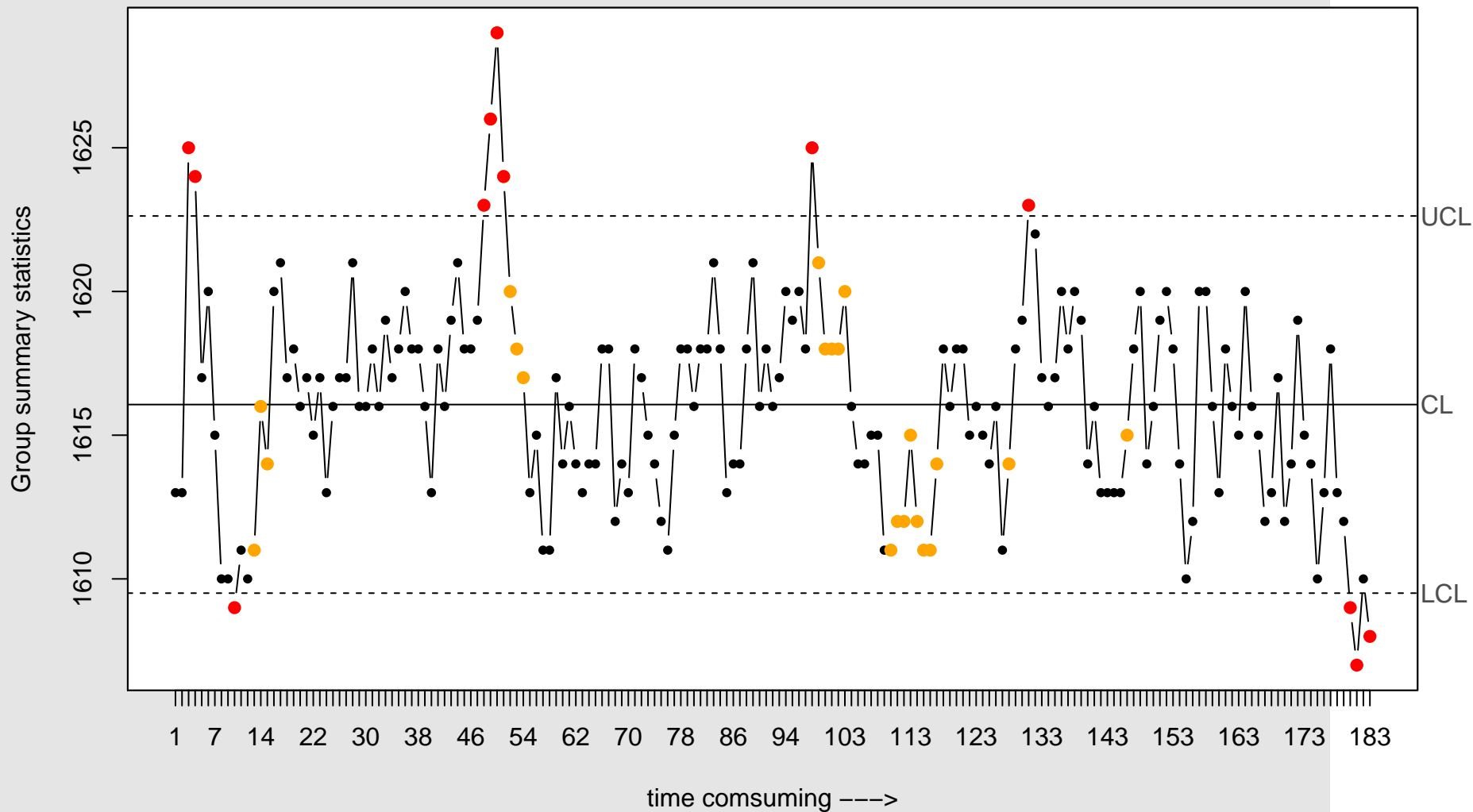Number of groups = 183
Center = 1615.792   LCL = 1609.114   Number beyond limits = 17
StdDev = 2.226054   UCL = 1622.471   Number violating runs = 40

61th column point of this product

Number of groups = 183
Center = 1616.066   LCL = 1609.504   Number beyond limits = 12
StdDev = 2.187086   UCL = 1622.627   Number violating runs = 24

62th column point of this product

Group summary statistics

time comsuming ----->
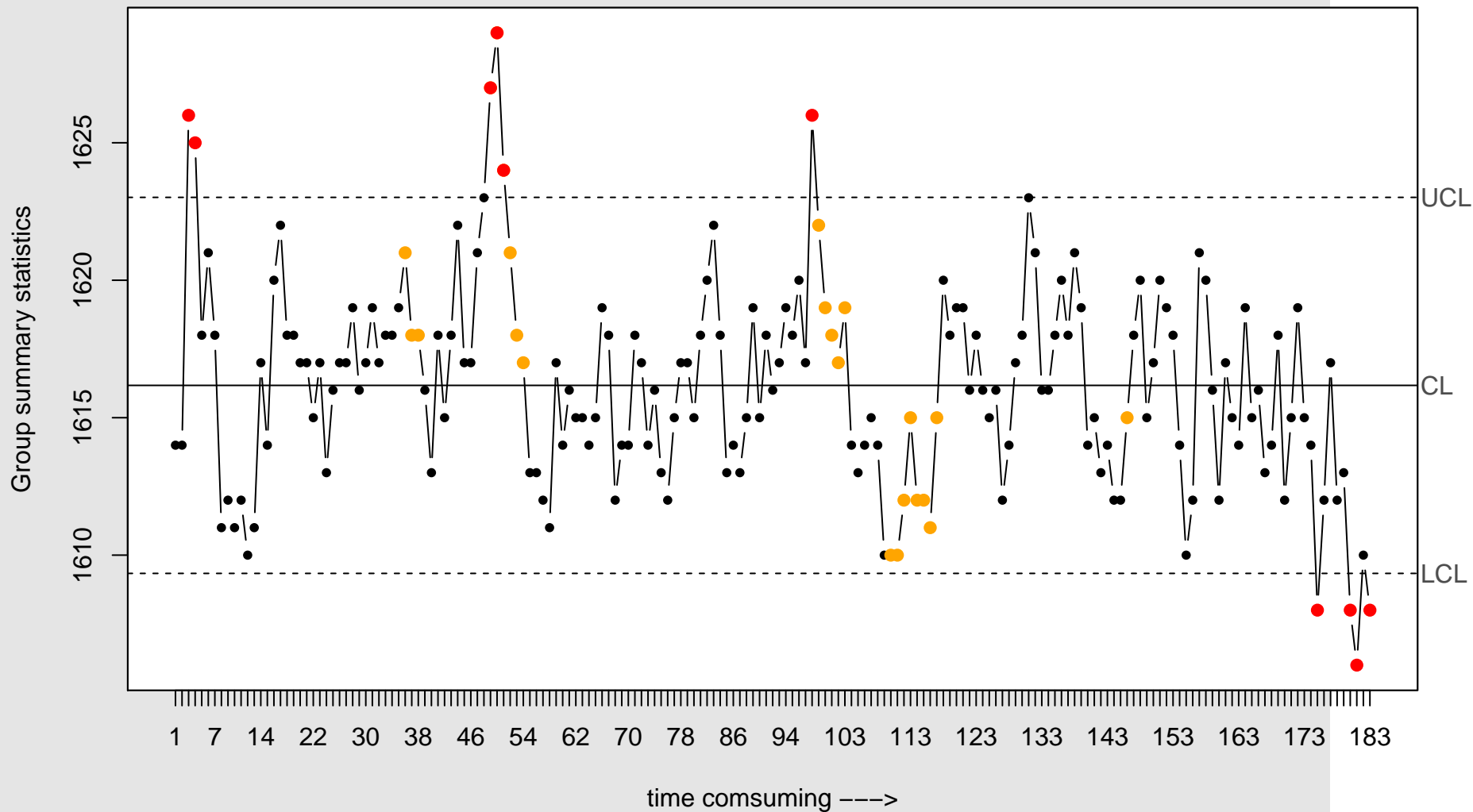
Number of groups = 183
Center = 1616.175   LCL = 1609.336   Number beyond limits = 10
StdDev = 2.279635   UCL = 1623.014   Number violating runs = 23

63th column point of this product

Group summary statistics

time comsuming –––>

Number of groups = 183
Center = 1616.344   LCL = 1609.739   Number beyond limits = 12
StdDev = 2.201699   UCL = 1622.949   Number violating runs = 23

64th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1616.213
StdDev = 2.167602
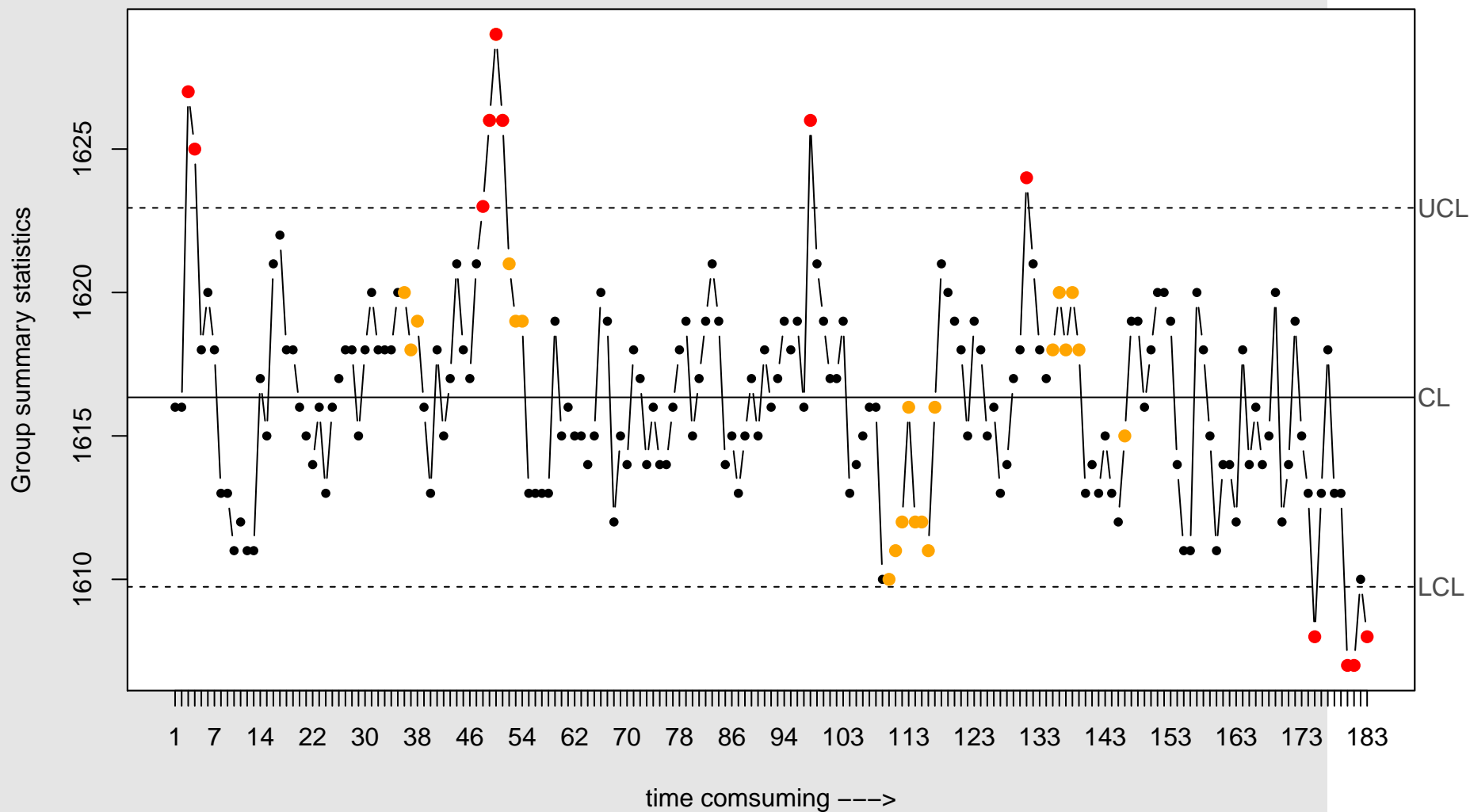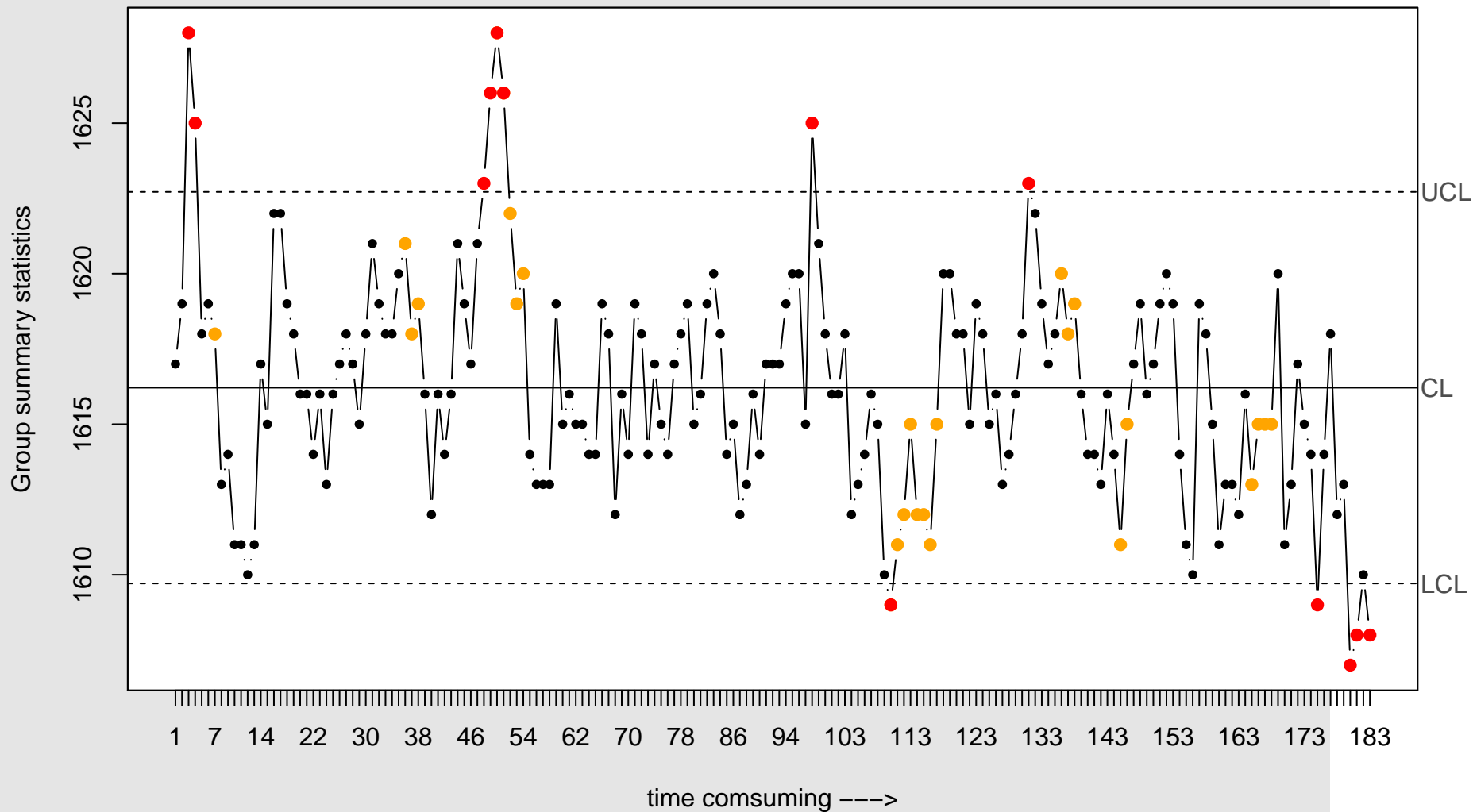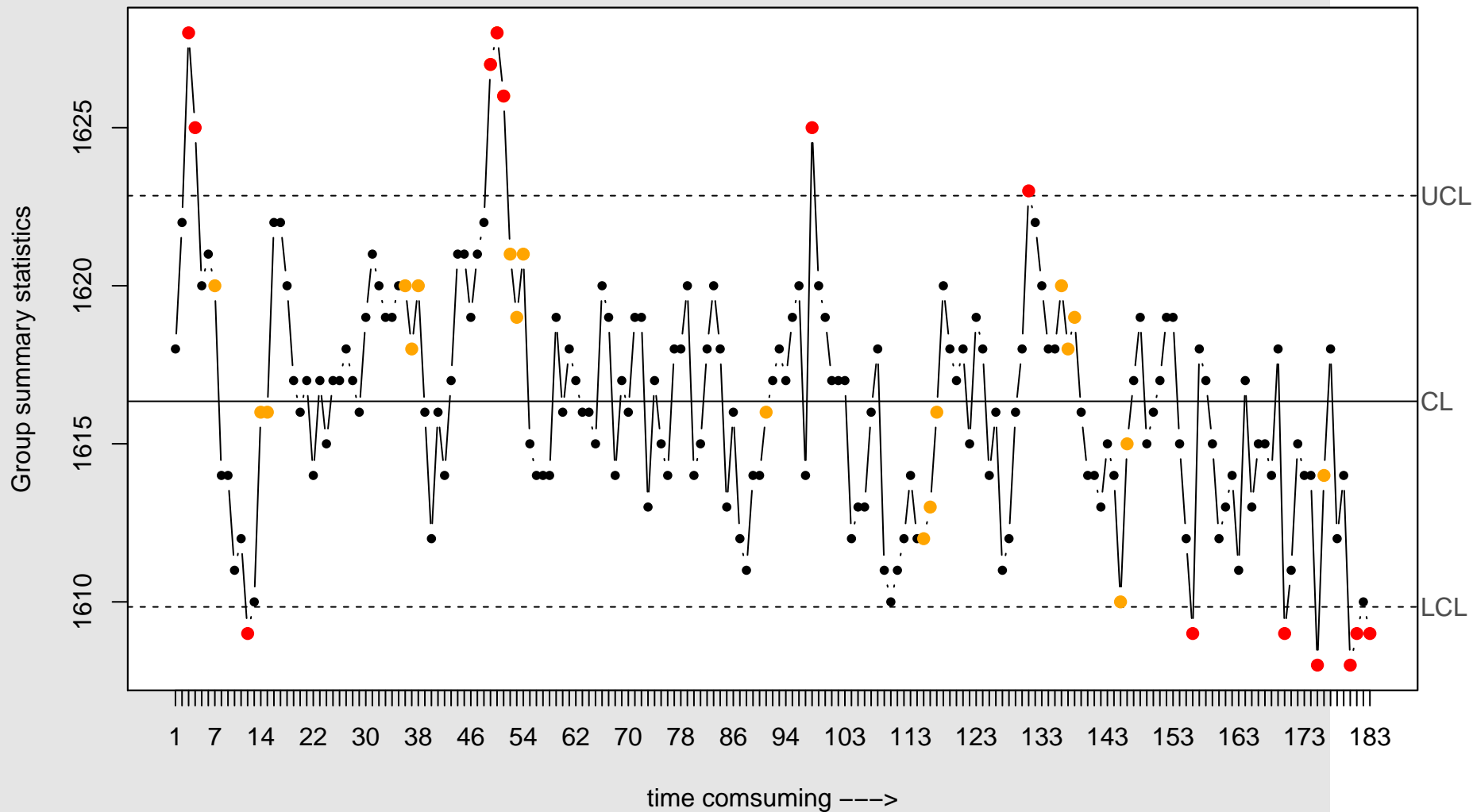
LCL = 1609.71
UCL = 1622.716

Number beyond limits = 13
Number violating runs = 26

65th column point of this product

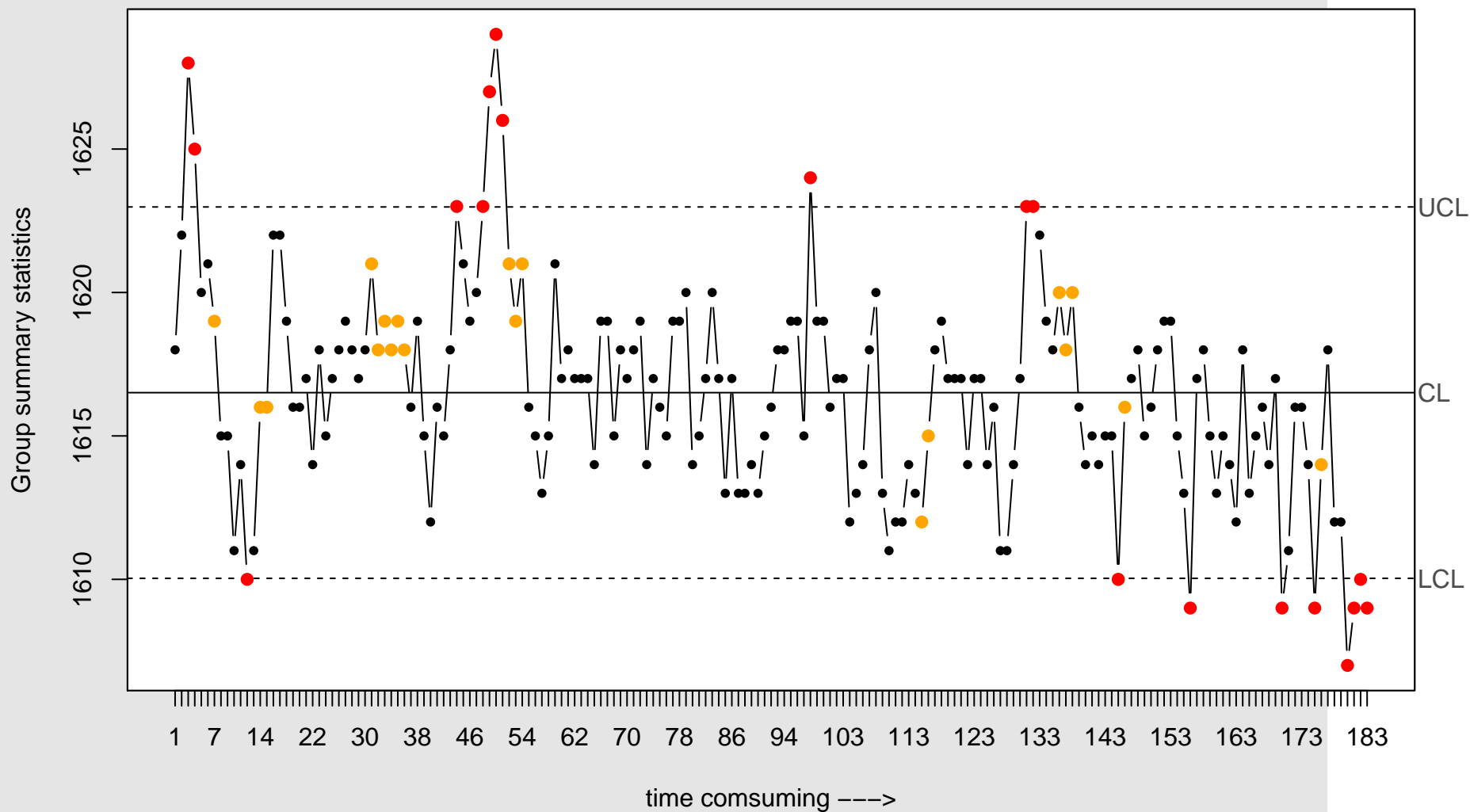Number of groups = 183
Center = 1616.344   LCL = 1609.841   Number beyond limits = 14
StdDev = 2.167602   UCL = 1622.847   Number violating runs = 22

66th column point of this product

Group summary statistics

time comsuming –––>

UCL

CL

LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

Number of groups = 183
Center = 1616.508   LCL = 1610.035   Number beyond limits = 19
StdDev = 2.15786   UCL = 1622.982   Number violating runs = 23

67th column point of this product

Group summary statistics

UCL

CL

LCL

time comsuming ––––>

Number of groups = 183
Center = 1616.47
StdDev = 2.099408

LCL = 1610.172
UCL = 1622.768

Number beyond limits = 19
Number violating runs = 19

68th column point of this product

Group summary statistics

time comsuming ––––>

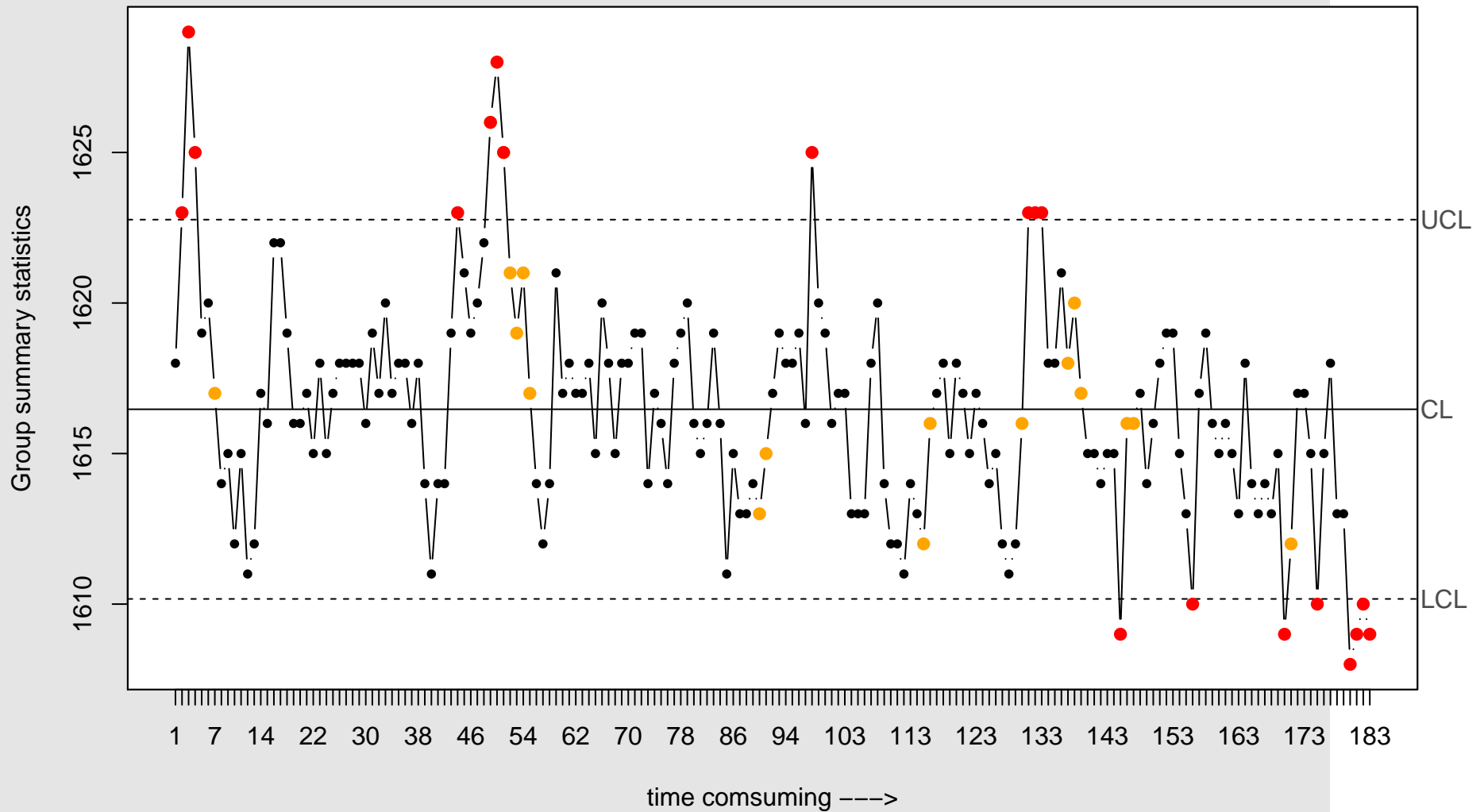Number of groups = 183
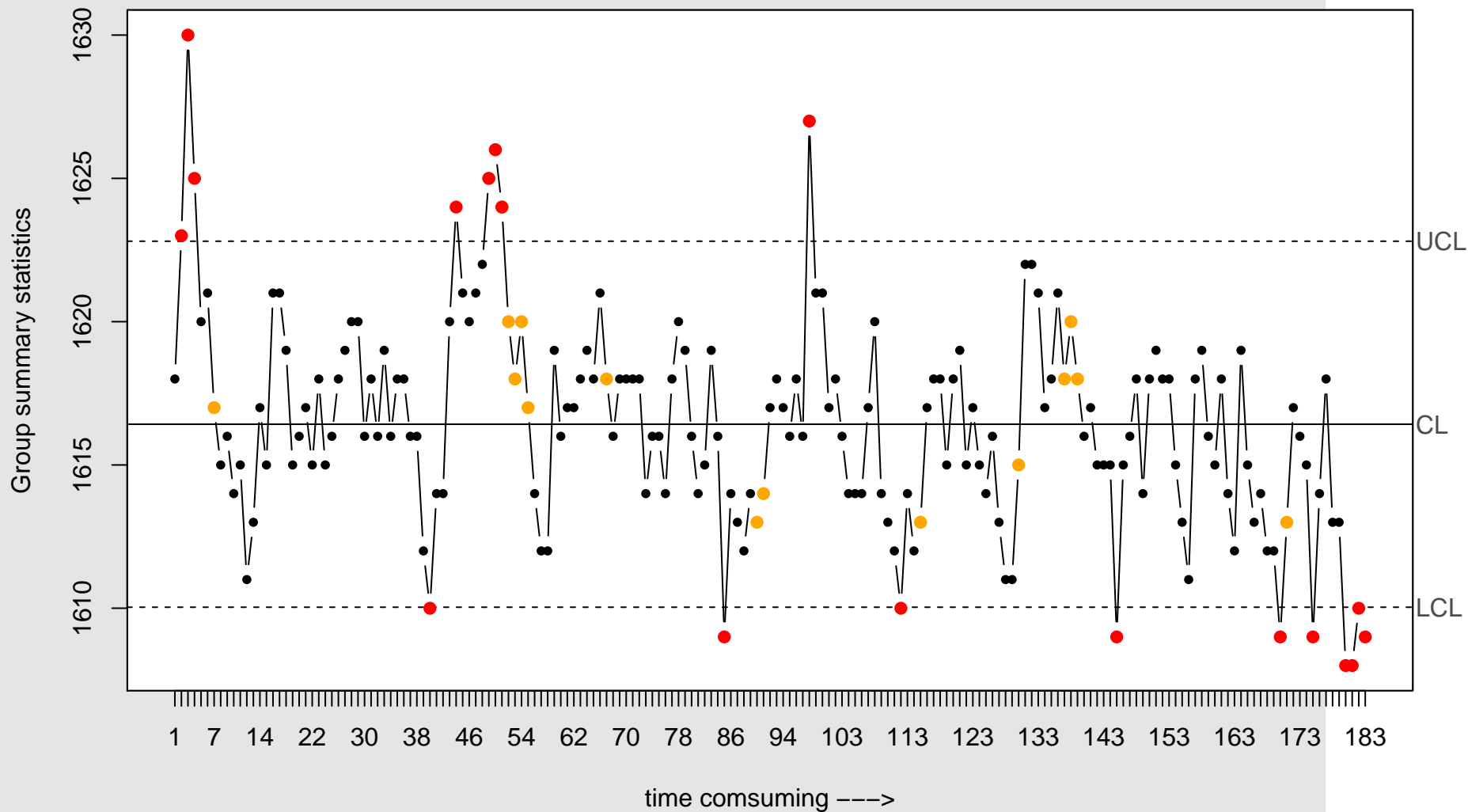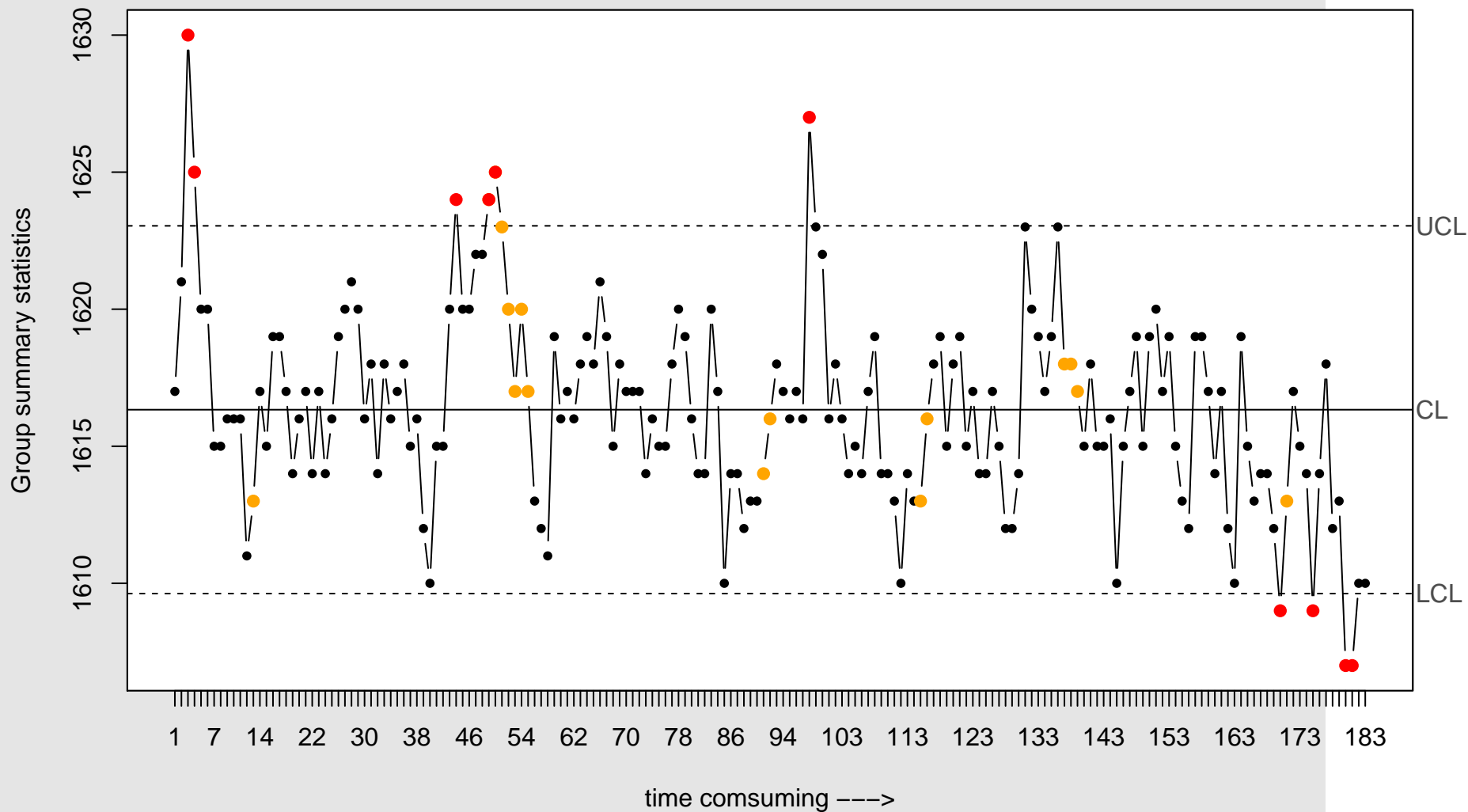Center = 1616.421
StdDev = 2.128634

LCL = 1610.035
UCL = 1622.807

Number beyond limits = 18
Number violating runs = 17

69th column point of this product

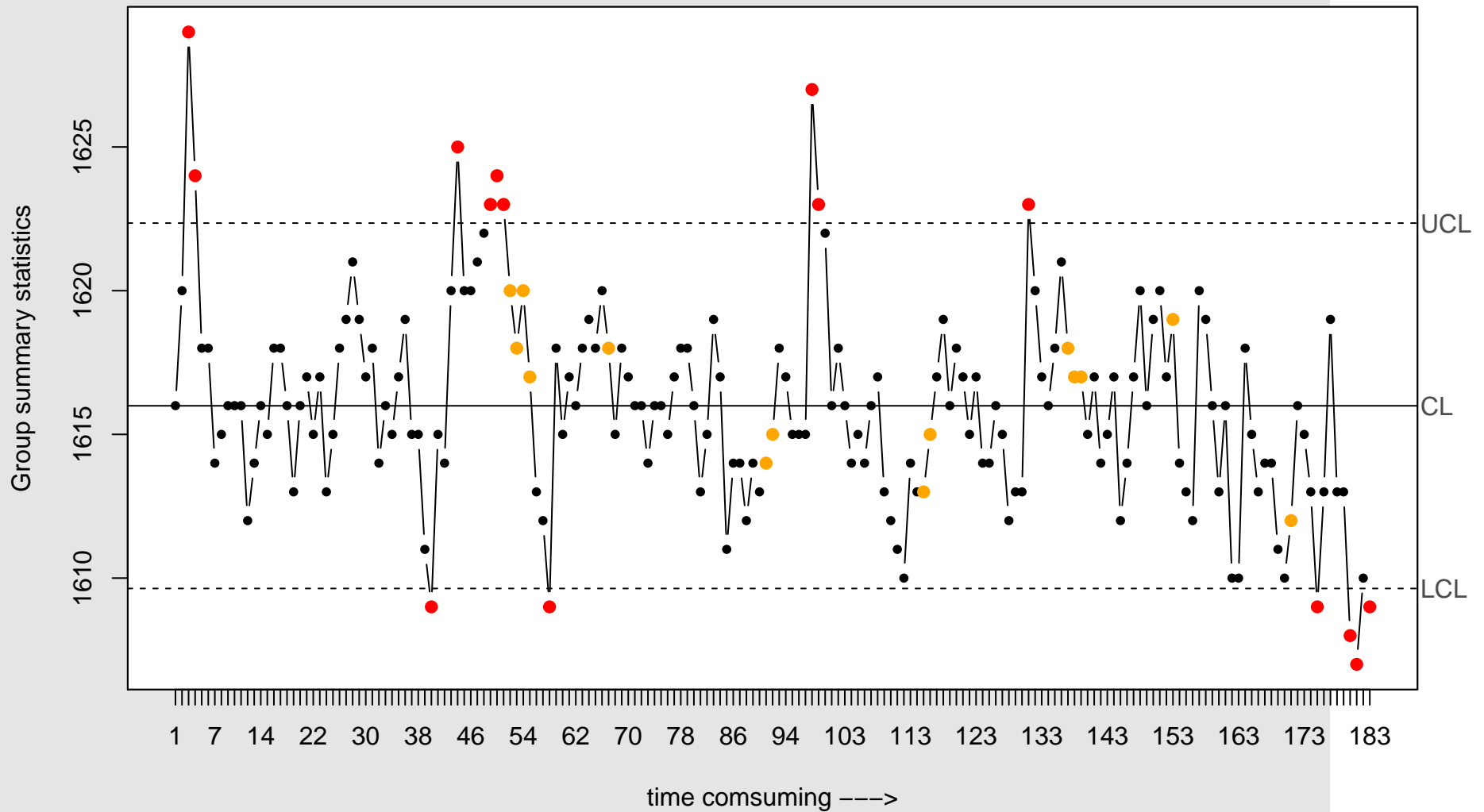
Number of groups = 183
Center = 1616.333   LCL = 1609.626   Number beyond limits = 10
StdDev = 2.235796   UCL = 1623.041   Number violating runs = 16

70th column point of this product

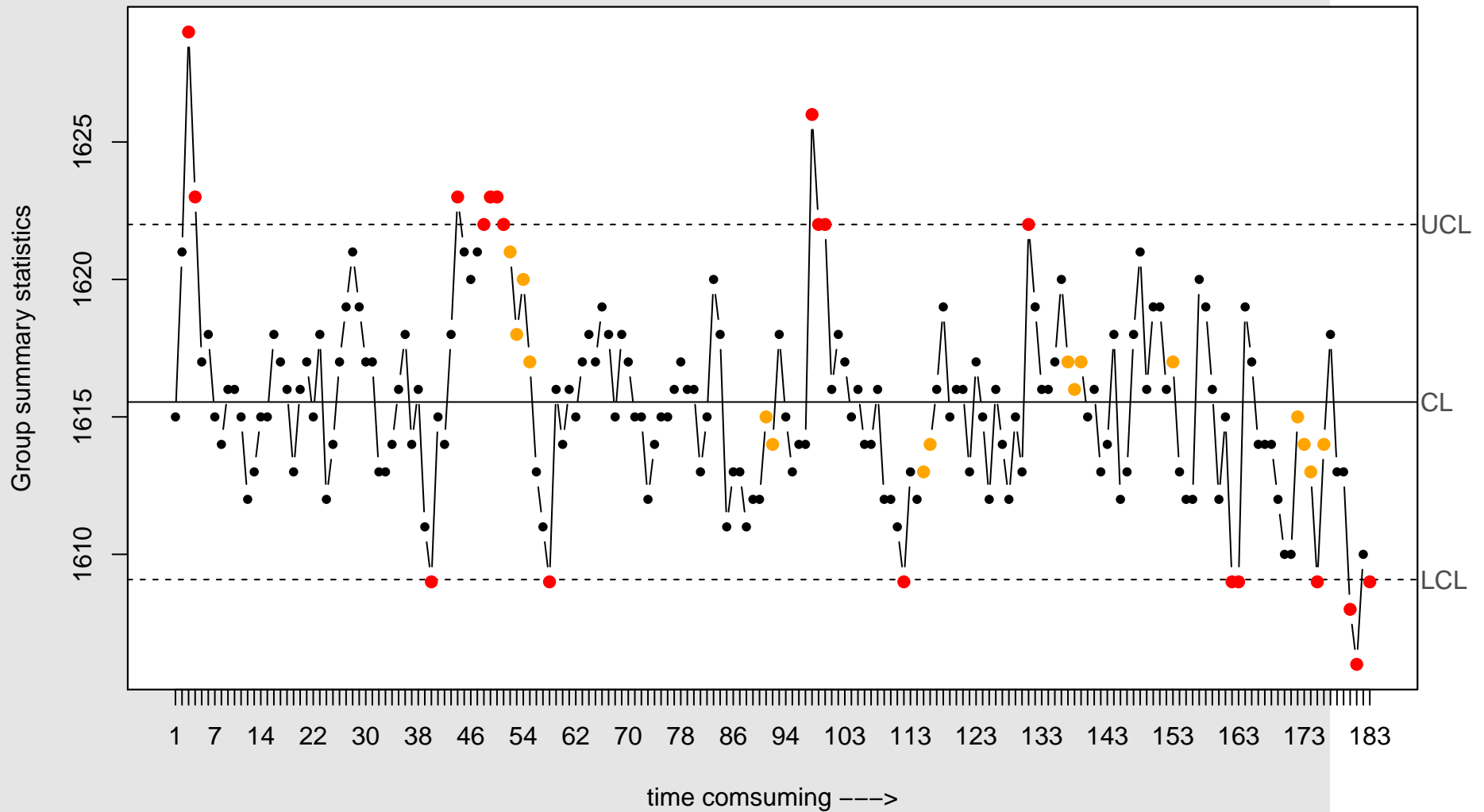time comsuming ---->

Number of groups = 183
Center = 1615.995
StdDev = 2.118892

LCL = 1609.638
UCL = 1622.351

Number beyond limits = 15
Number violating runs = 17

71th column point of this product

Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1615.541
StdDev = 2.152989
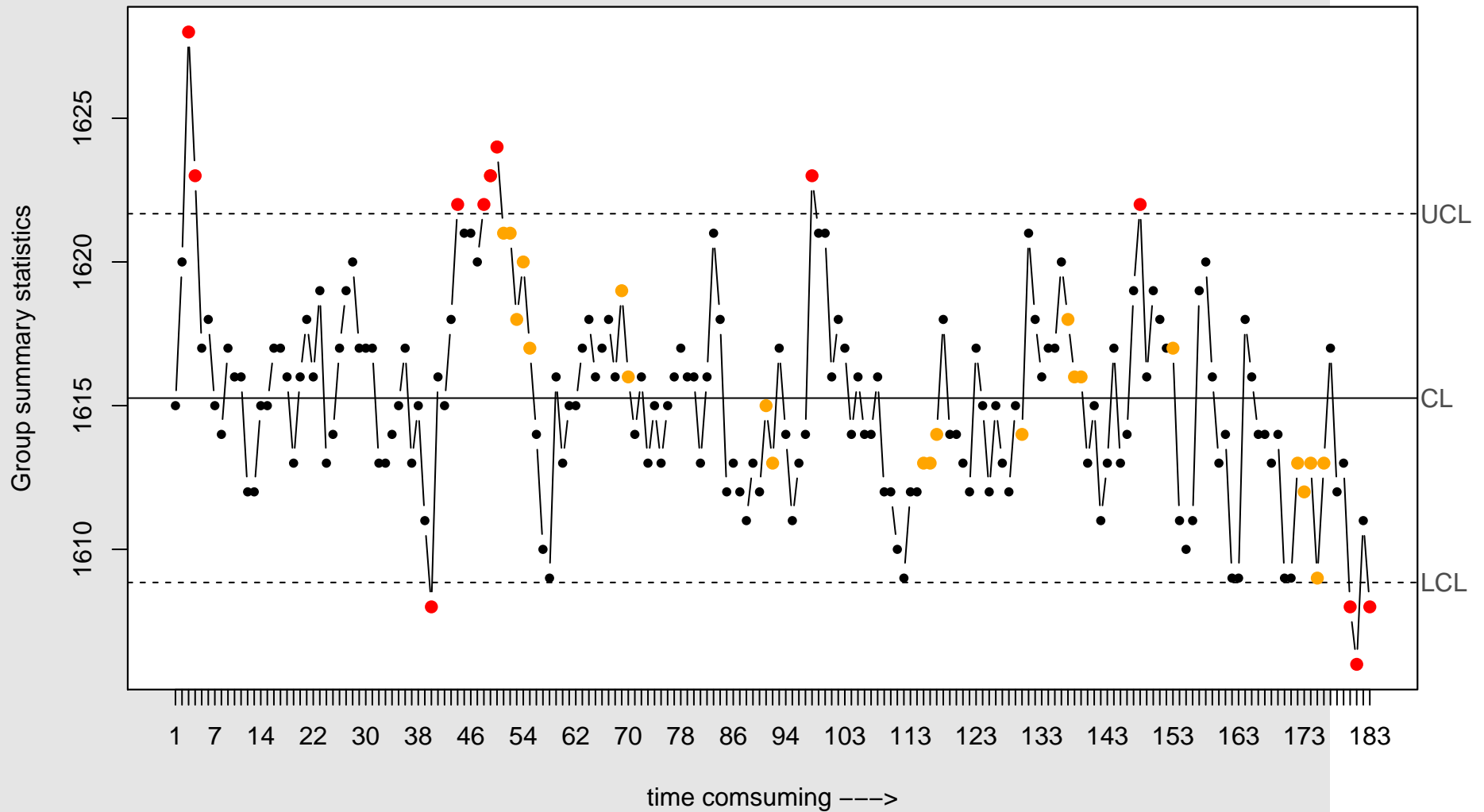
LCL = 1609.082
UCL = 1622

Number beyond limits = 20
Number violating runs = 20

72th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1615.262
StdDev = 2.138376
LCL = 1608.847
UCL = 1621.677
Number beyond limits = 12
Number violating runs = 24

73th column point of this product

Group summary statistics

time comsuming ---->

UCL
CL
LCL
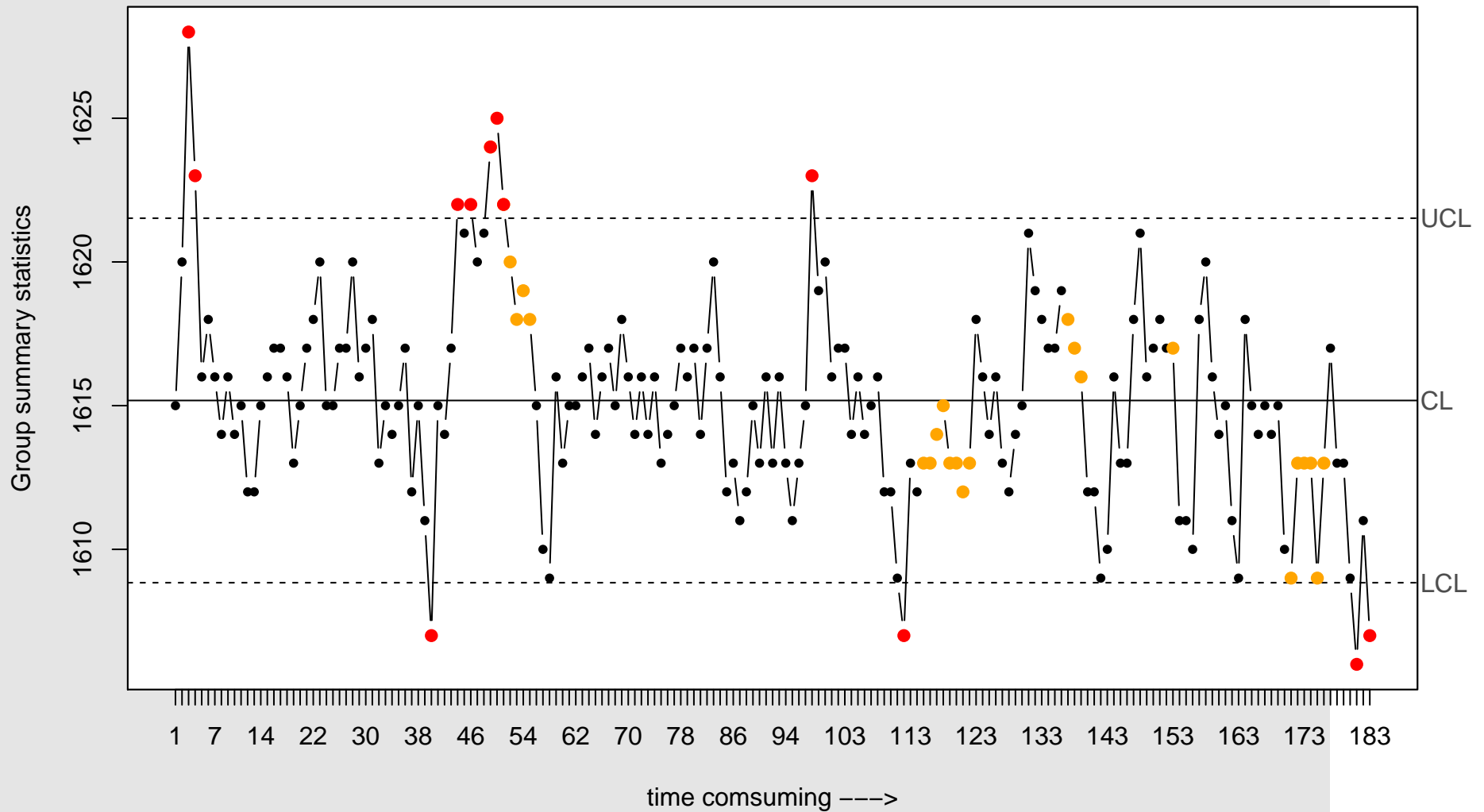
Number of groups = 183
Center = 1615.18   LCL = 1608.838   Number beyond limits = 12
StdDev = 2.114021   UCL = 1621.522   Number violating runs = 25

74th column point of this product

Group summary statistics

time comsuming ---->
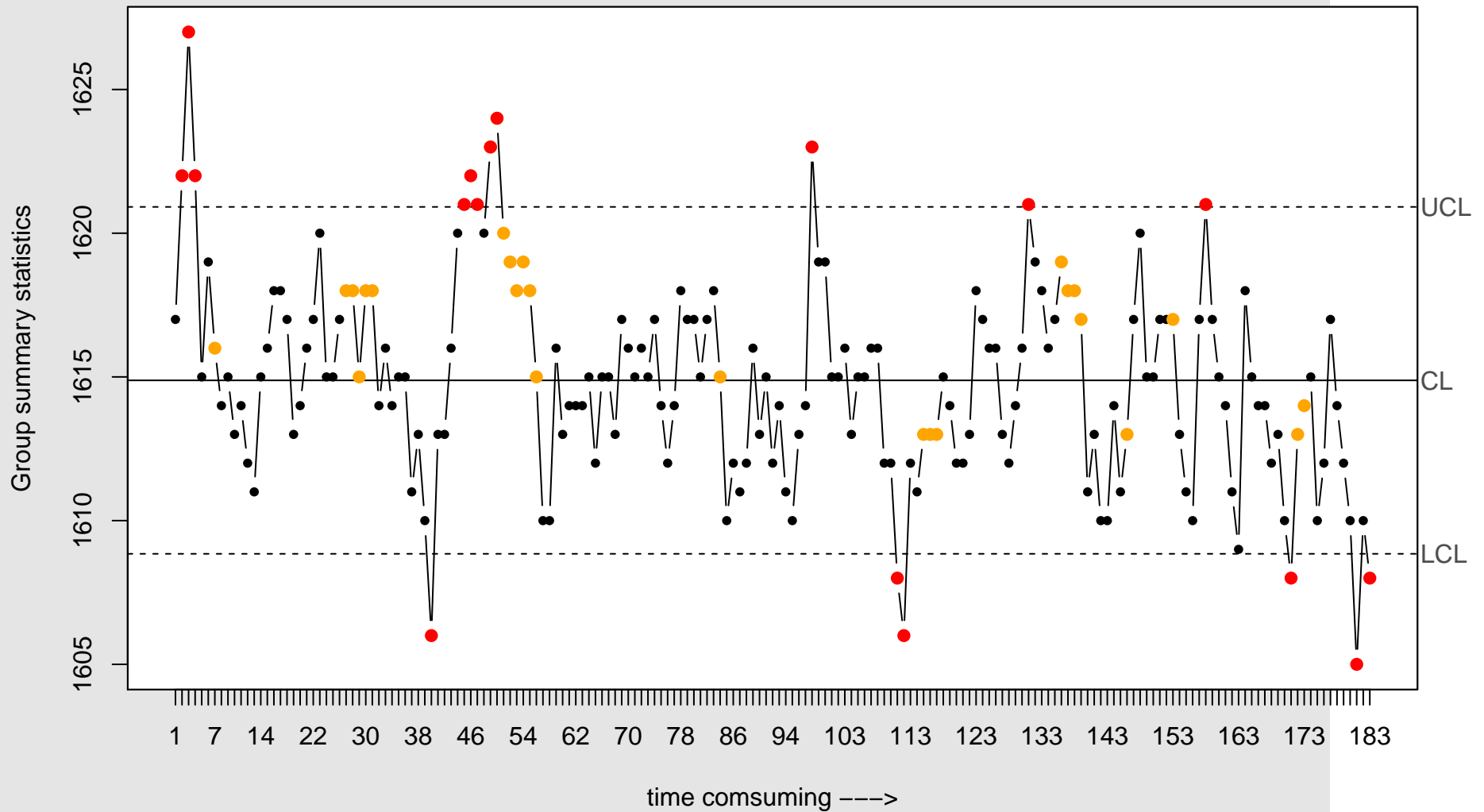
Number of groups = 183
Center = 1614.88   LCL = 1608.845   Number beyond limits = 17
StdDev = 2.011729   UCL = 1620.915   Number violating runs = 26

75th column point of this product

Group summary statistics

time comsuming ––––>
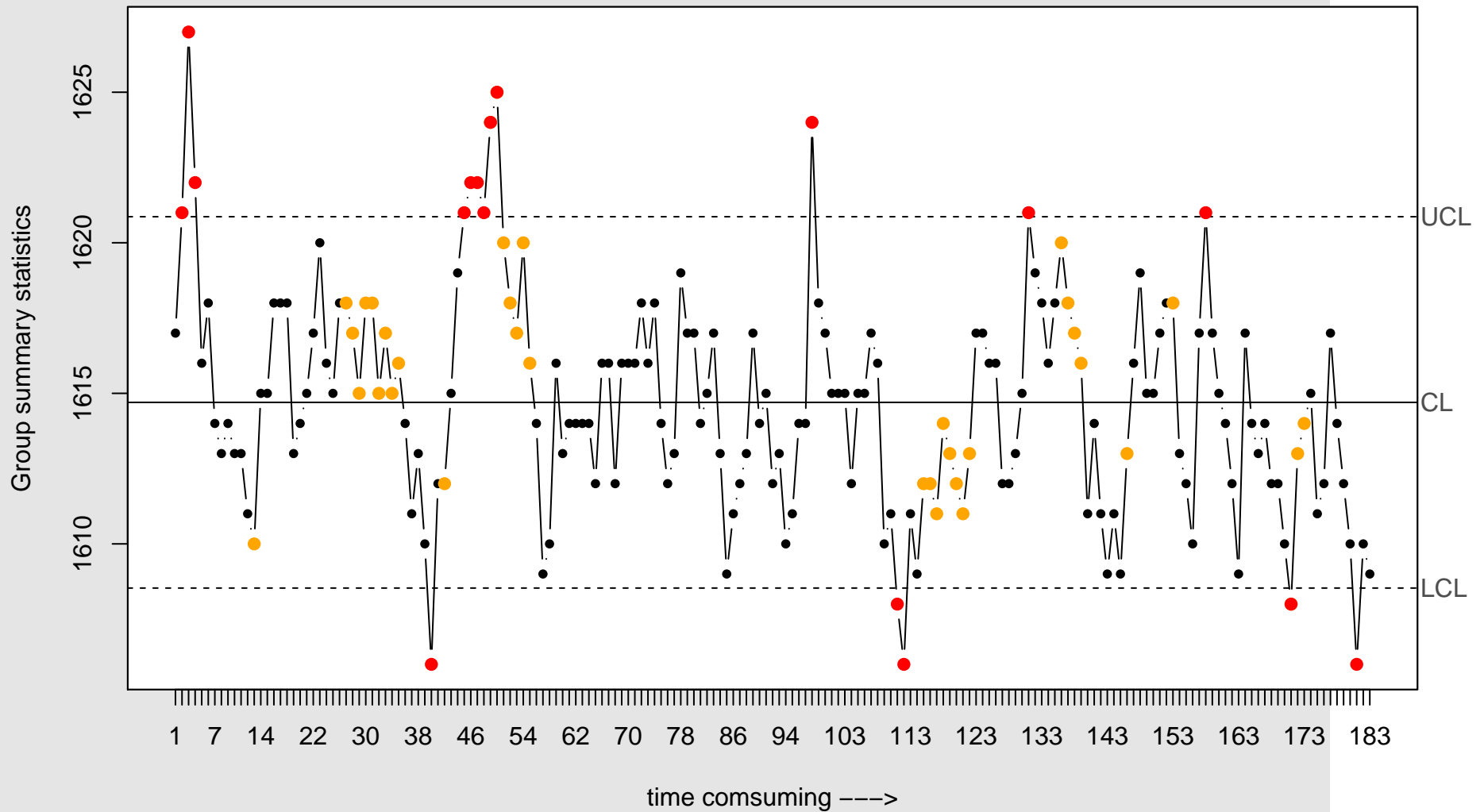
Number of groups = 183
Center = 1614.699   LCL = 1608.533   Number beyond limits = 17
StdDev = 2.055569   UCL = 1620.866   Number violating runs = 35

76th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1614.699   LCL = 1608.854   Number beyond limits = 15
StdDev = 1.948406   UCL = 1620.545   Number violating runs = 39

77th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1614.333
StdDev = 1.899696
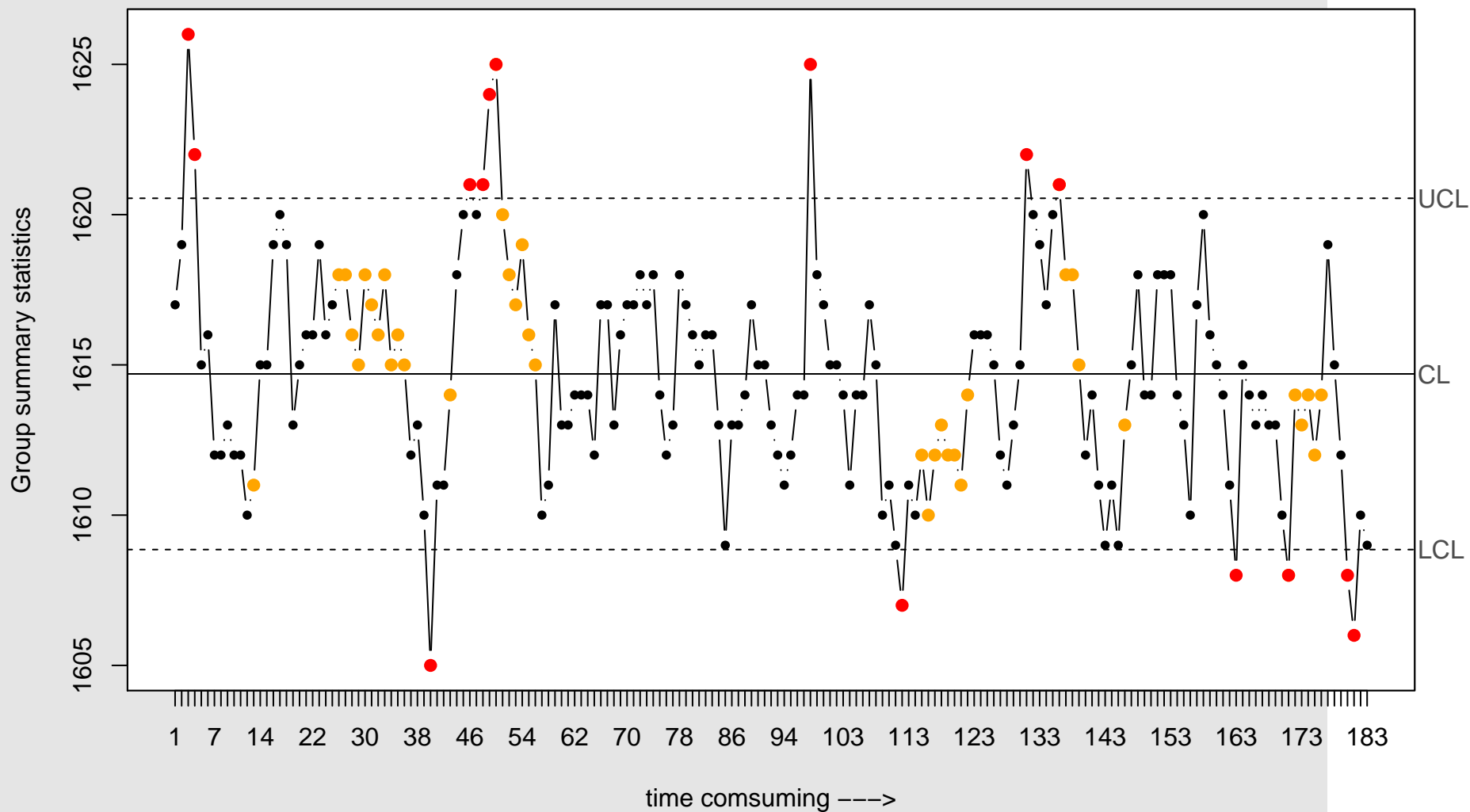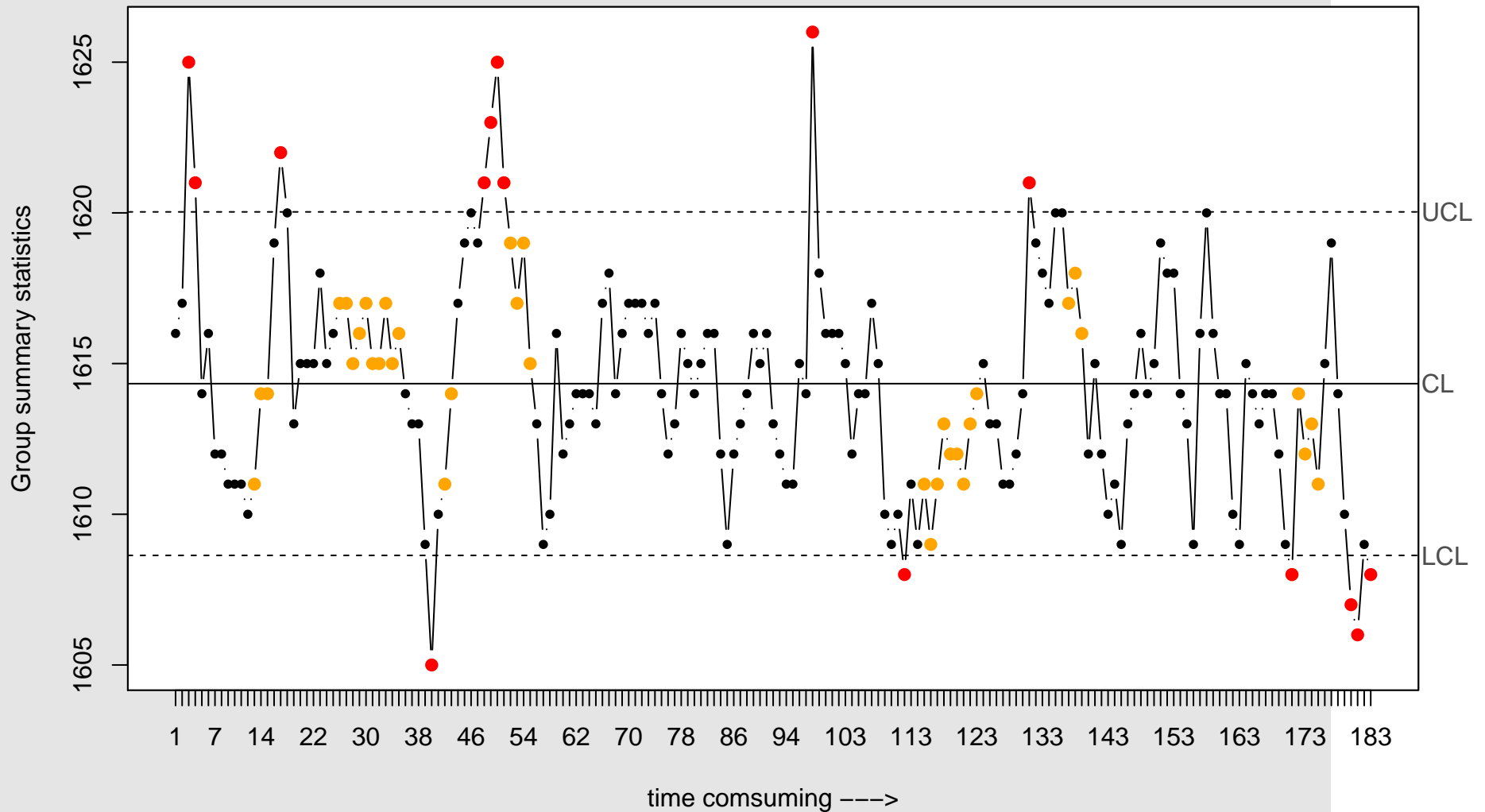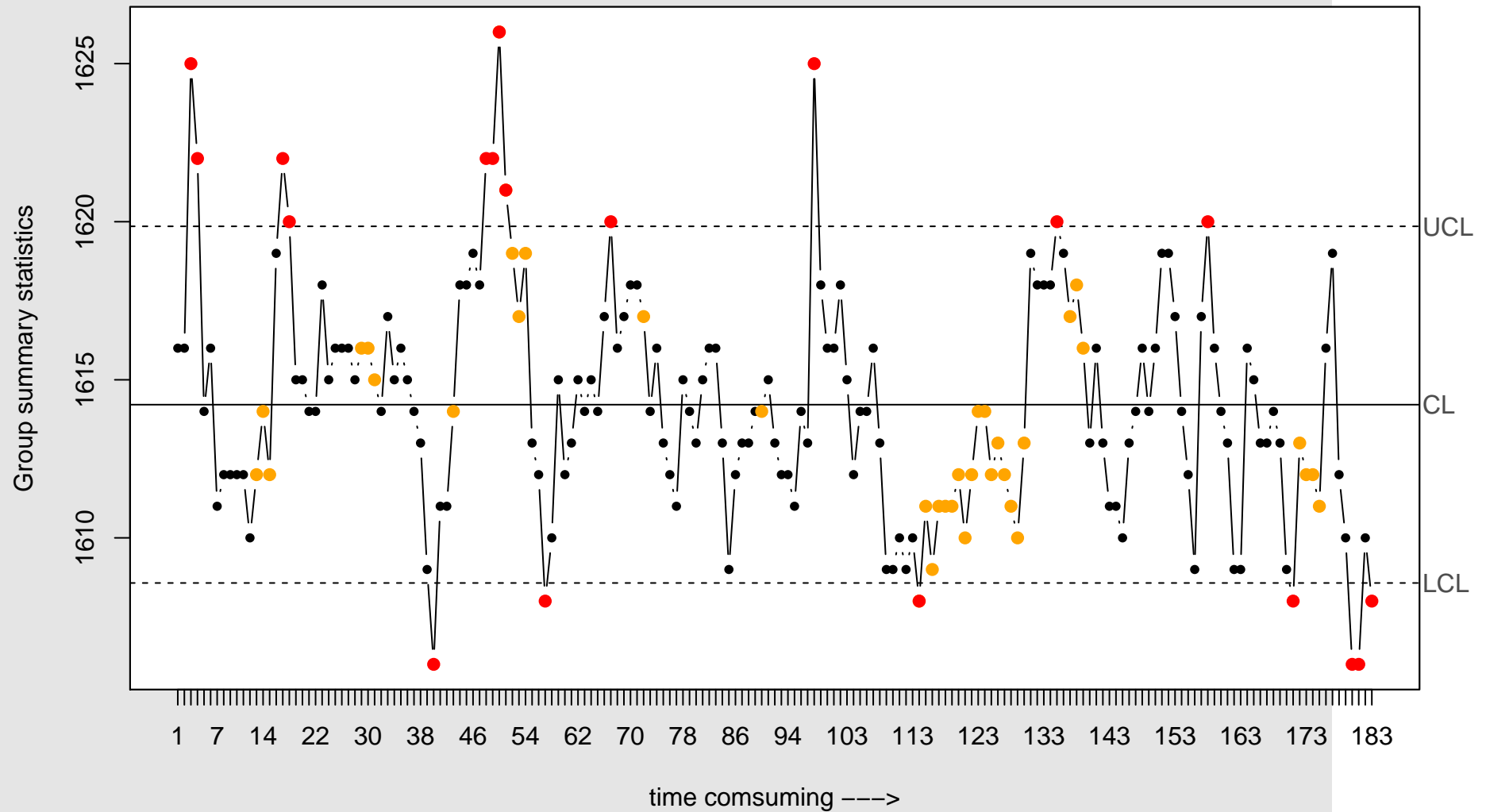
LCL = 1608.634
UCL = 1620.032

Number beyond limits = 15
Number violating runs = 38

78th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1614.213   LCL = 1608.572   Number beyond limits = 19
StdDev = 1.880212   UCL = 1619.854   Number violating runs = 38

79th column point of this product

Group summary statistics

time comsuming ---->
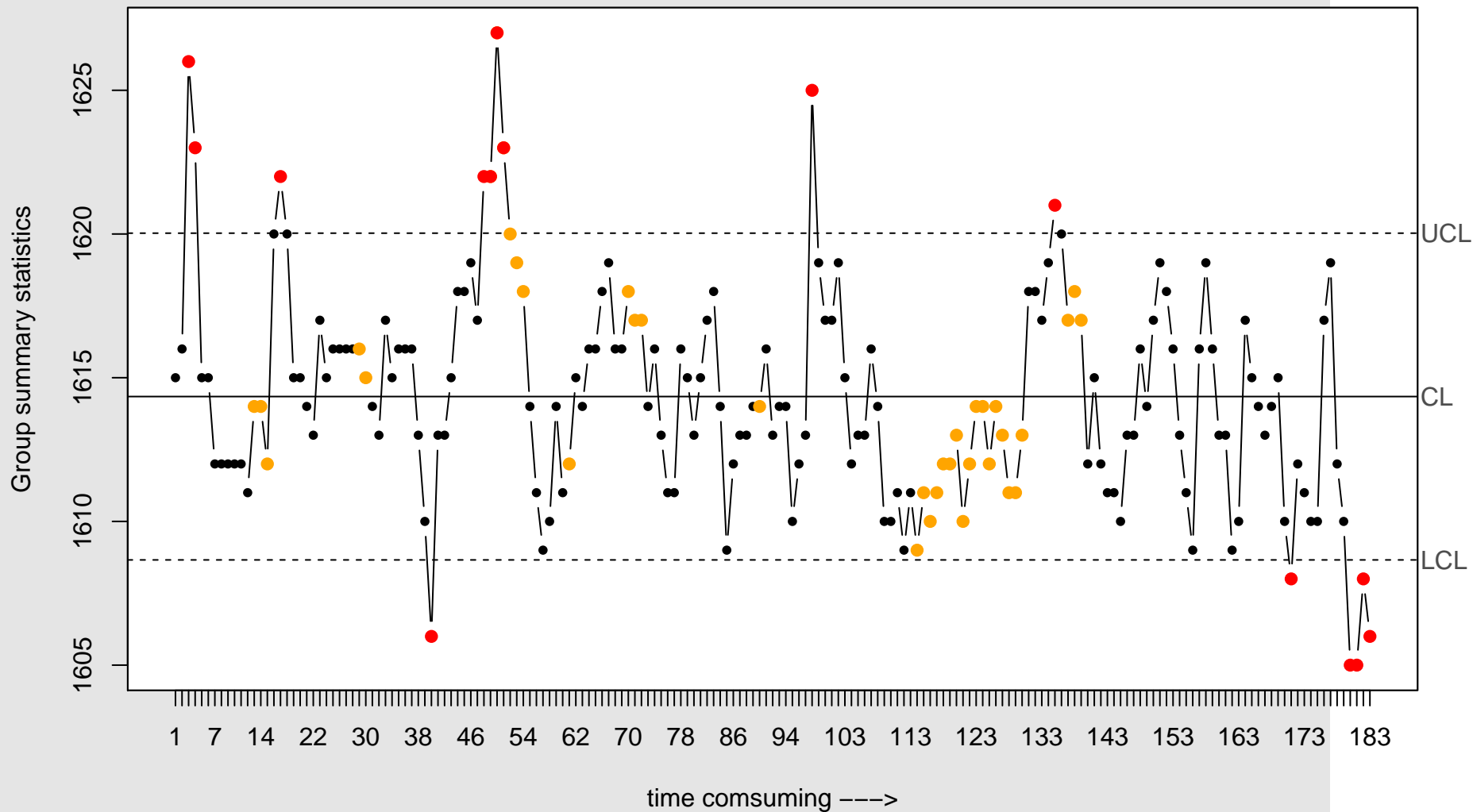
Number of groups = 183
Center = 1614.344
StdDev = 1.894825

LCL = 1608.66
UCL = 1620.029

Number beyond limits = 15
Number violating runs = 36

80th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1614.437
StdDev = 1.850986
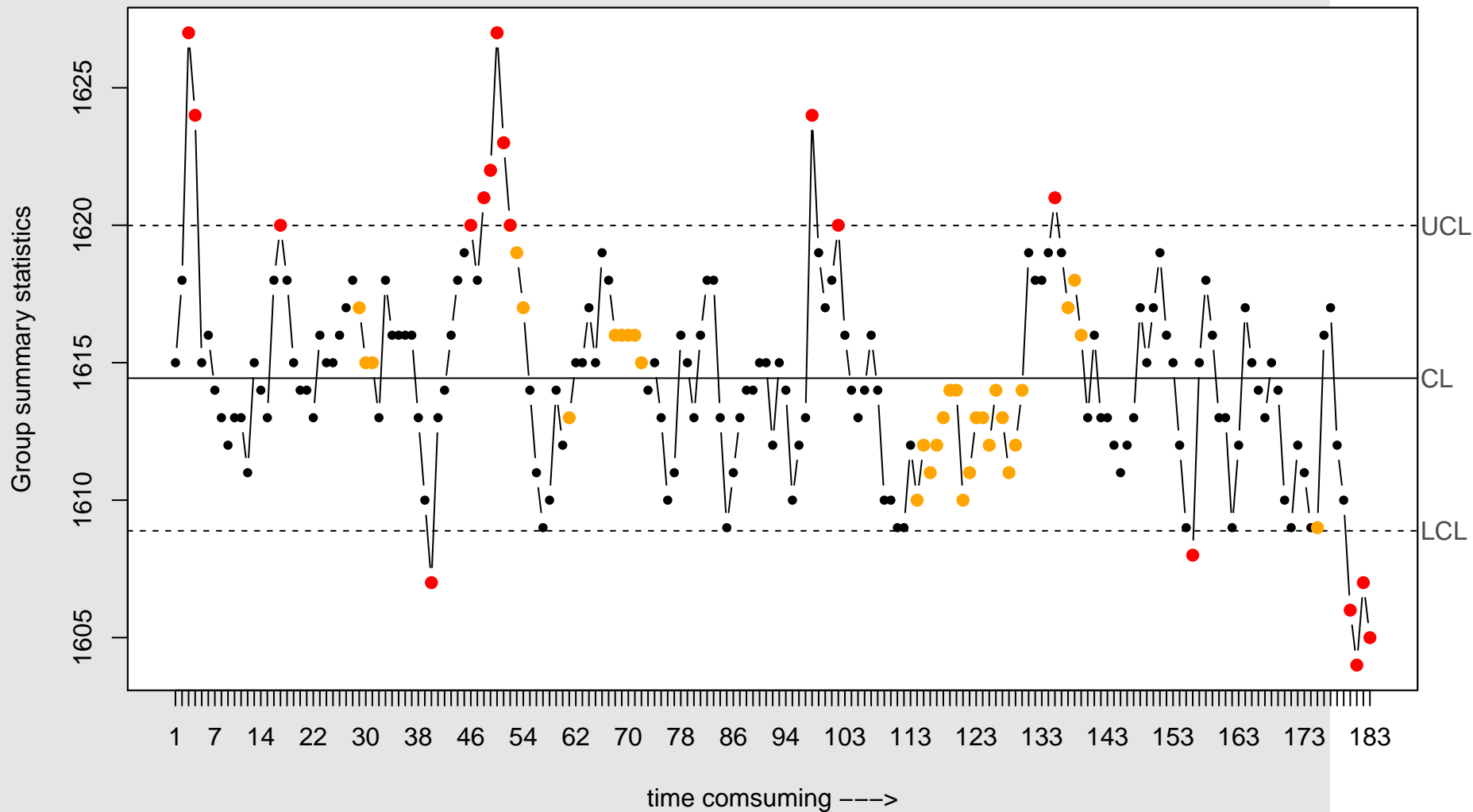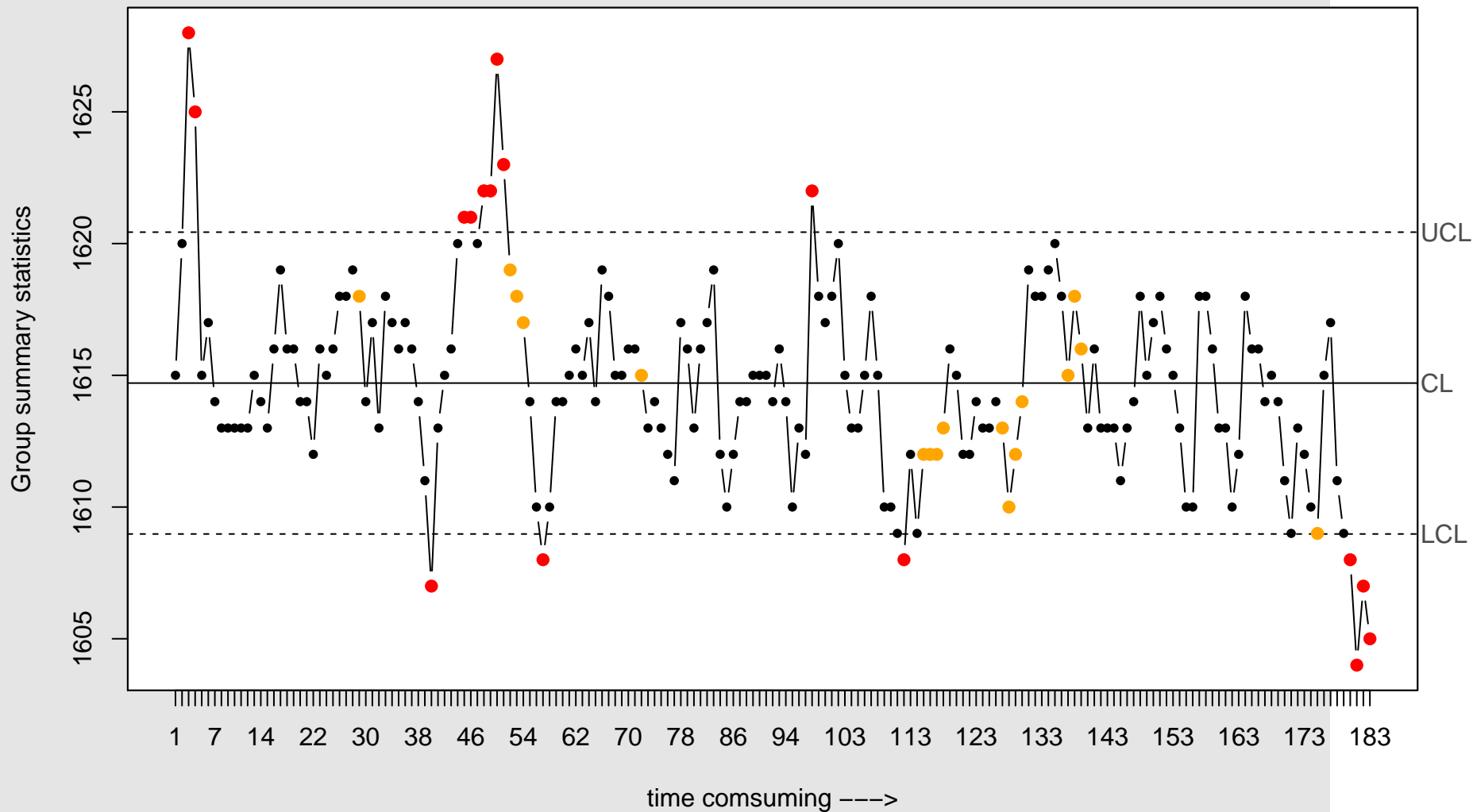
LCL = 1608.884
UCL = 1619.99

Number beyond limits = 18
Number violating runs = 36

81th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1614.705   LCL = 1608.977   Number beyond limits = 16
StdDev = 1.909438   UCL = 1620.433   Number violating runs = 21

82th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1615.186   LCL = 1609.253   Number beyond limits = 16
StdDev = 1.977632   UCL = 1621.119   Number violating runs = 22

83th column point of this product

Group summary statistics

time comsuming ––––>

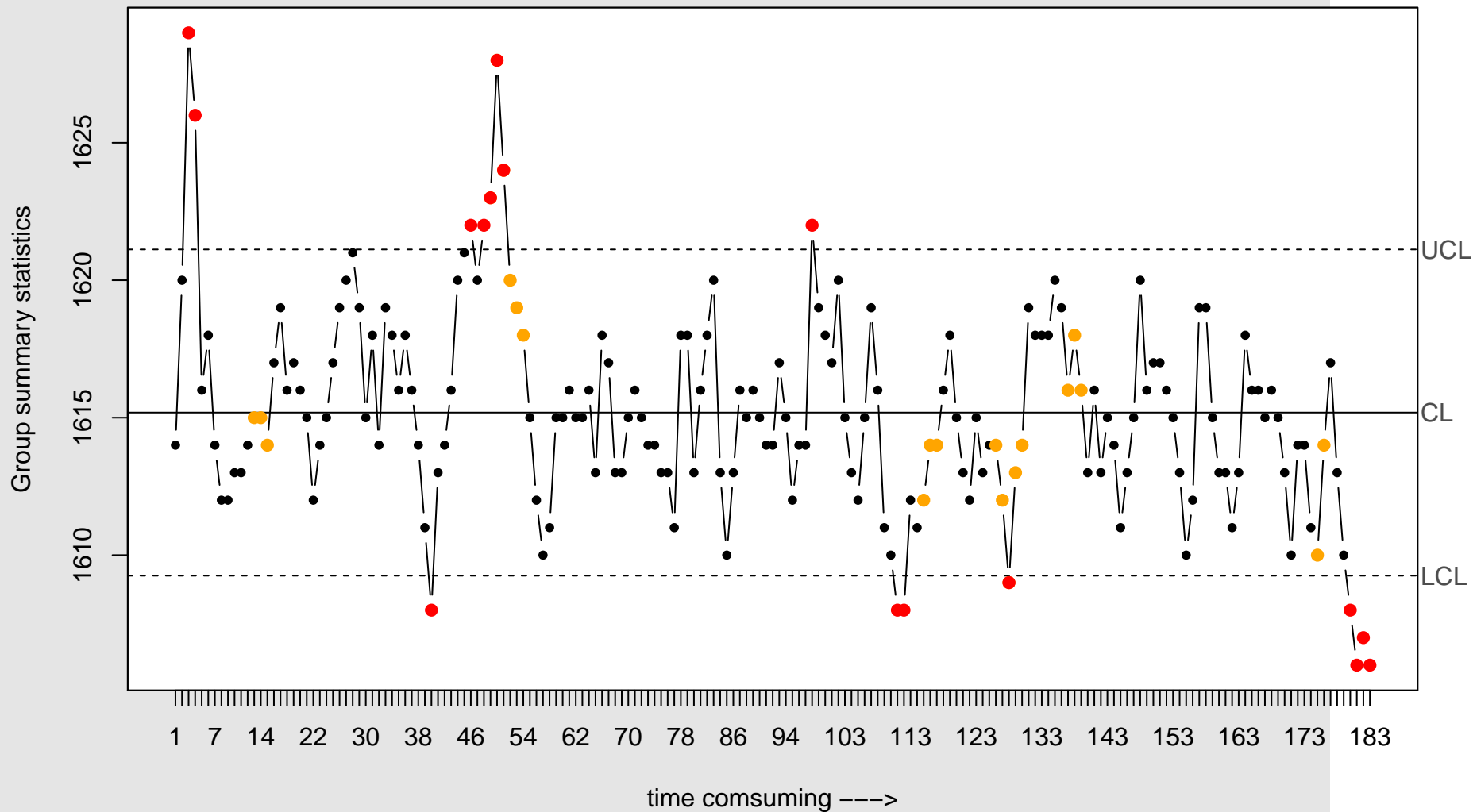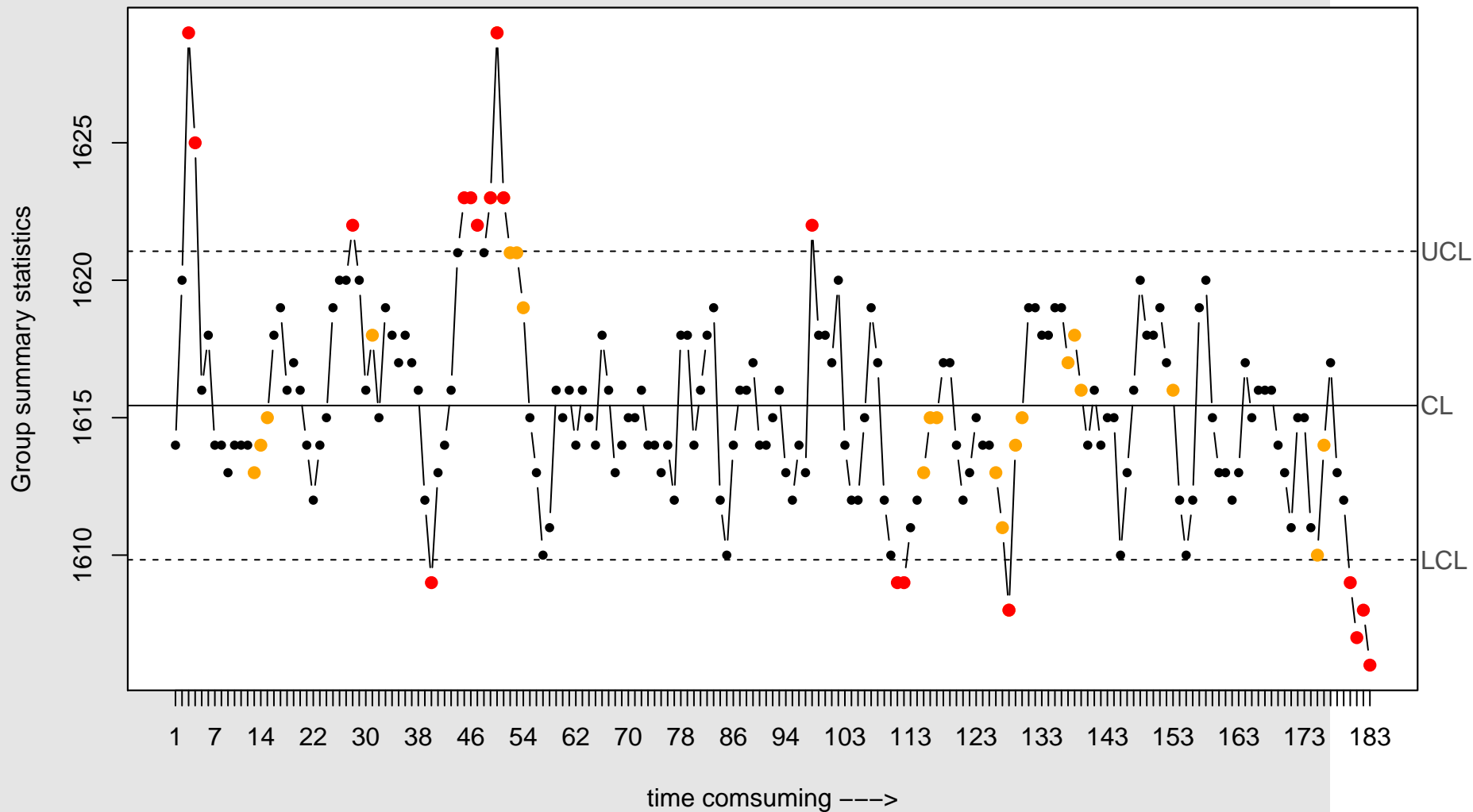Number of groups = 183
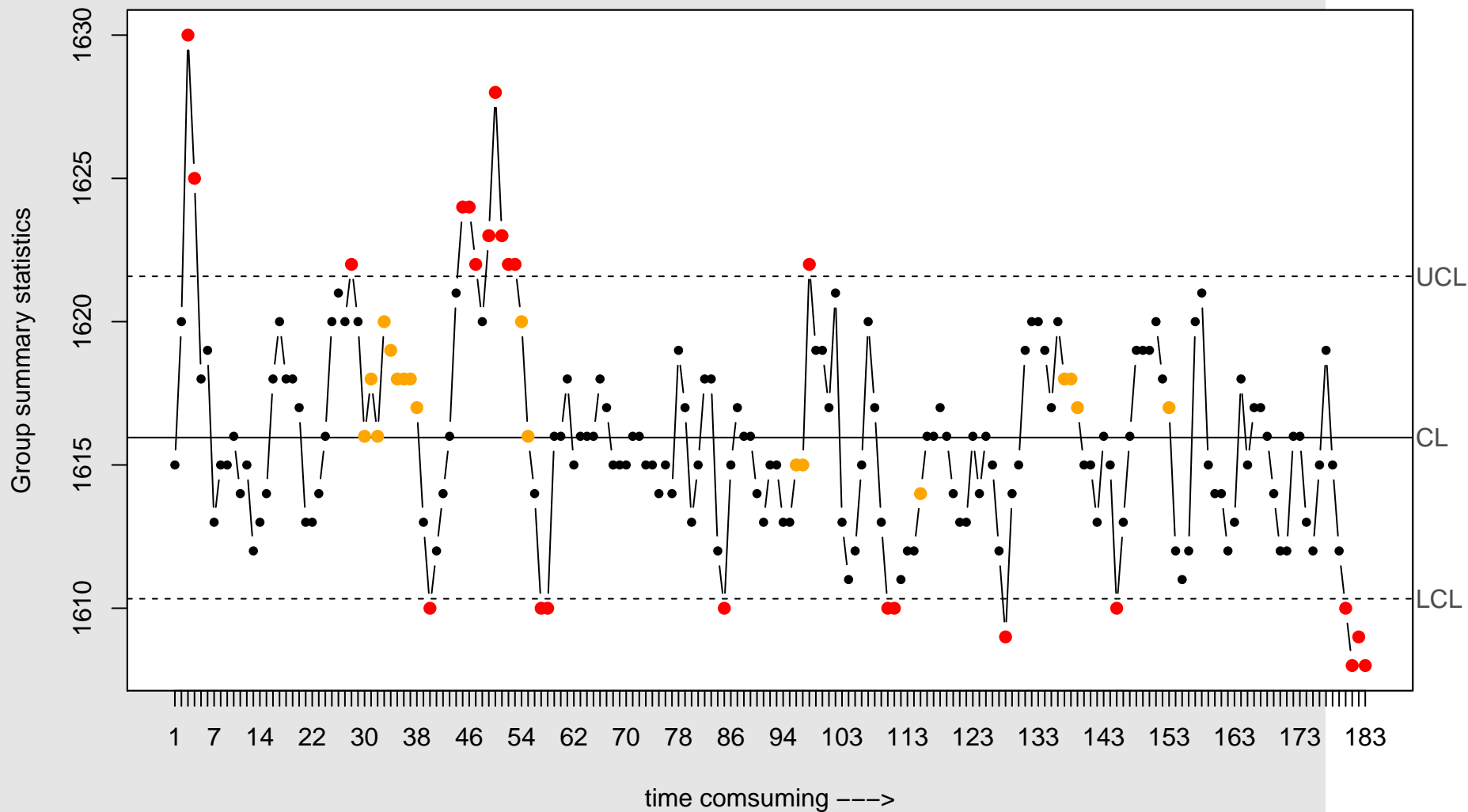Center = 1615.443
StdDev = 1.87047

LCL = 1609.831
UCL = 1621.054

Number beyond limits = 18
Number violating runs = 24

84th column point of this product

Number of groups = 183
Center = 1615.956   LCL = 1610.33   Number beyond limits = 24
StdDev = 1.875341   UCL = 1621.582   Number violating runs = 23

85th column point of this product

Group summary statistics

time comsuming ---->
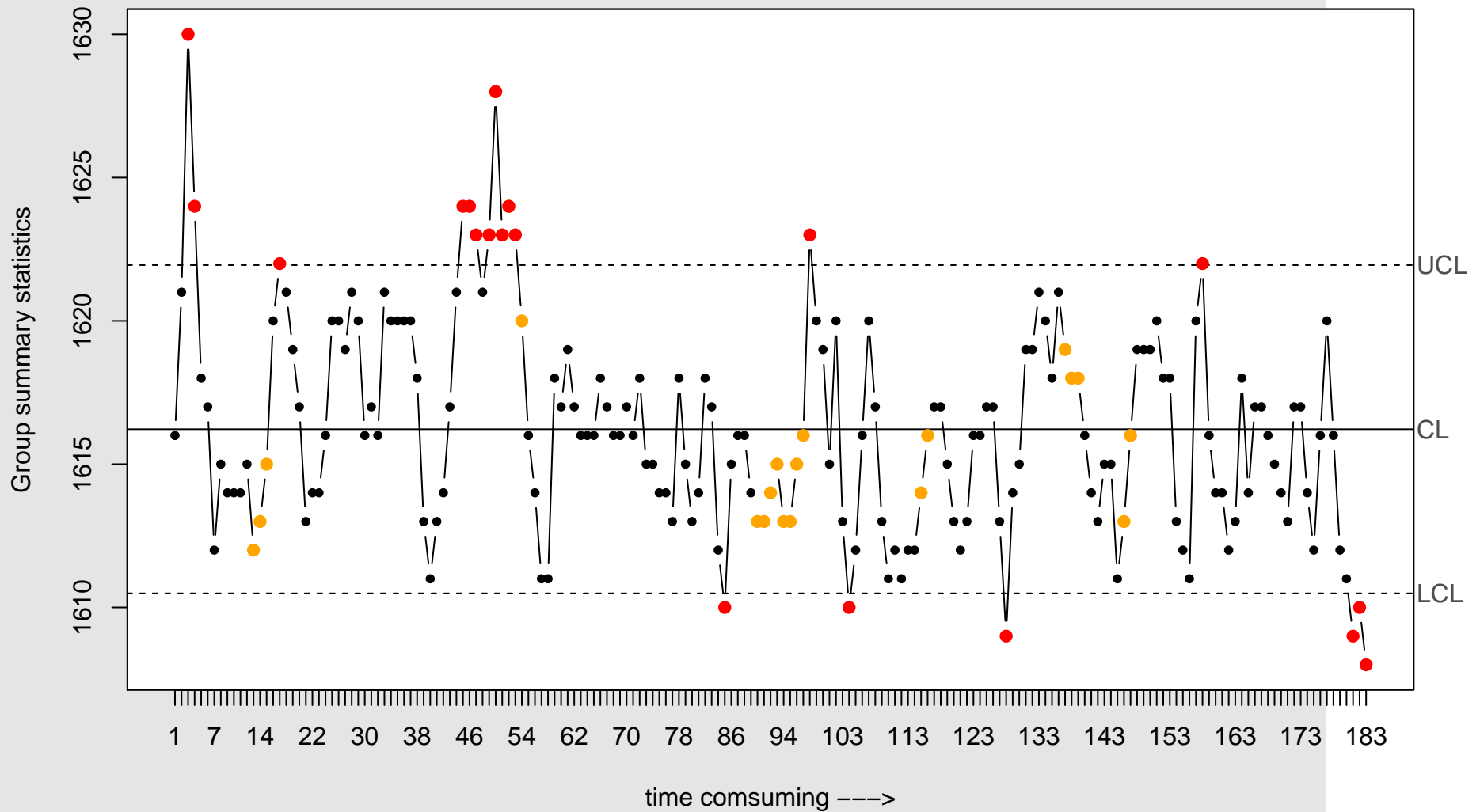
Number of groups = 183
Center = 1616.219   LCL = 1610.49   Number beyond limits = 19
StdDev = 1.909438   UCL = 1621.947   Number violating runs = 24

86th column point of this product

Group summary statistics

time comsuming ---->
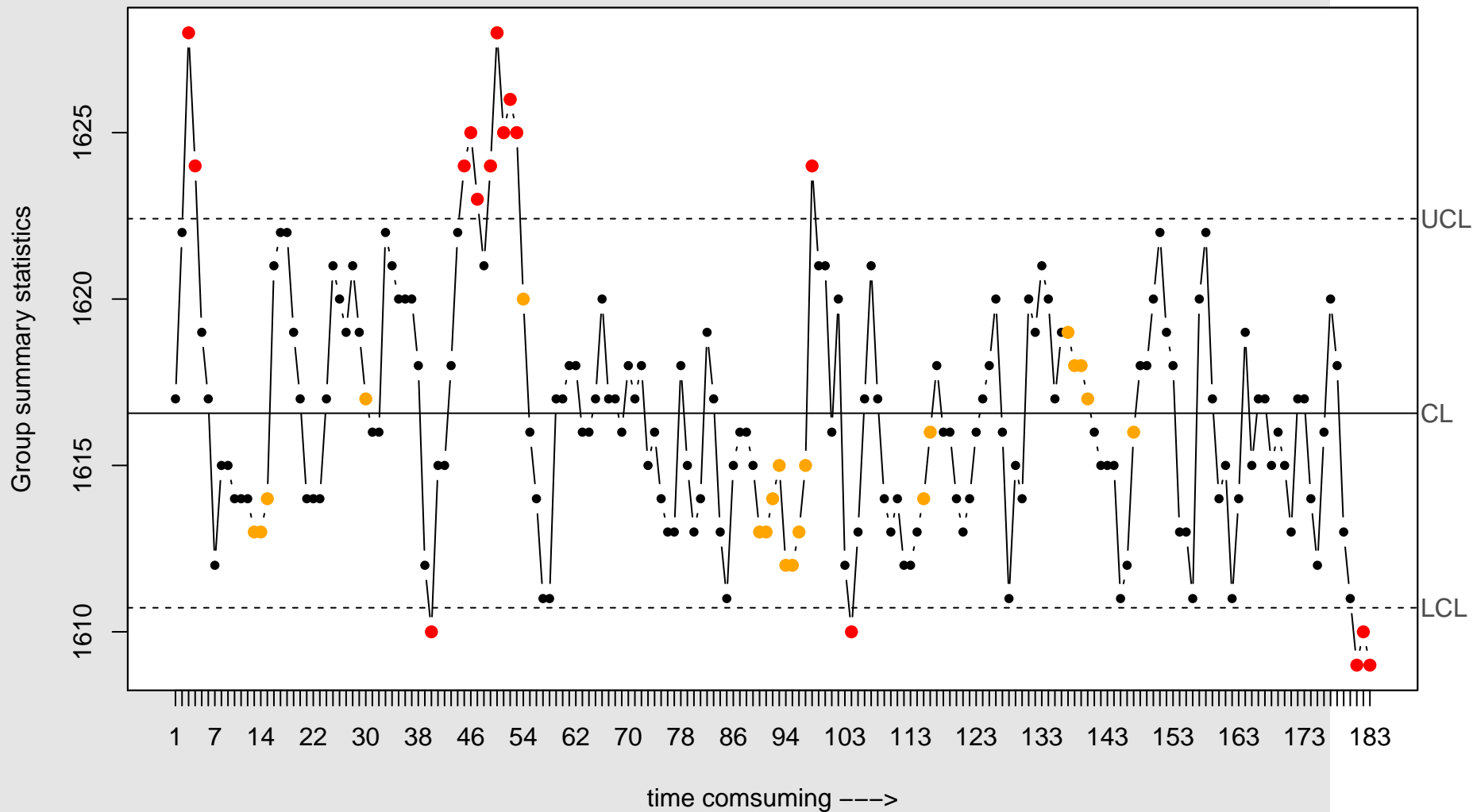
Number of groups = 183
Center = 1616.568
StdDev = 1.948406

LCL = 1610.723
UCL = 1622.414

Number beyond limits = 16
Number violating runs = 25

87th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
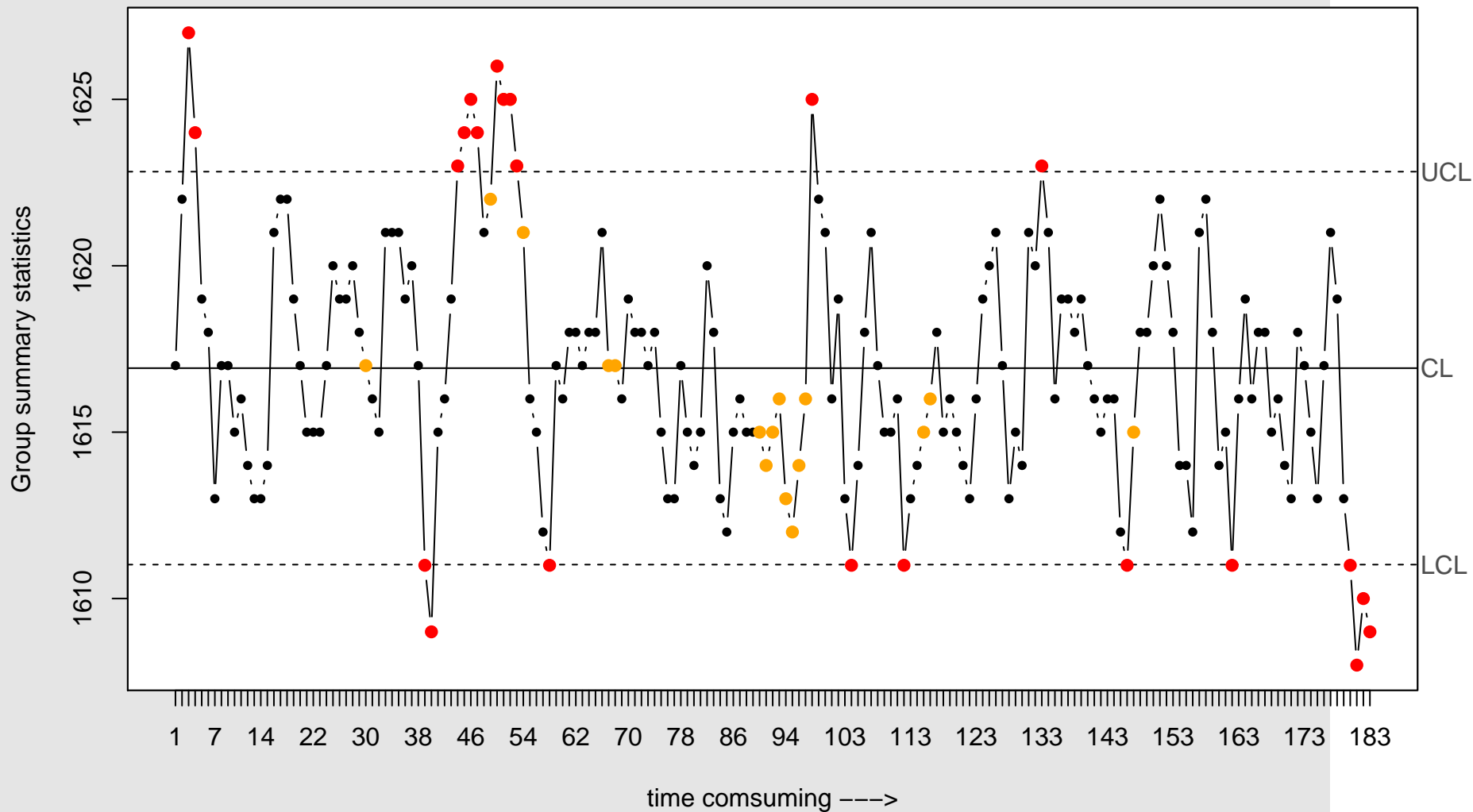Center = 1616.923   LCL = 1611.02   Number beyond limits = 23
StdDev = 1.96789   UCL = 1622.827   Number violating runs = 20

88th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ---->
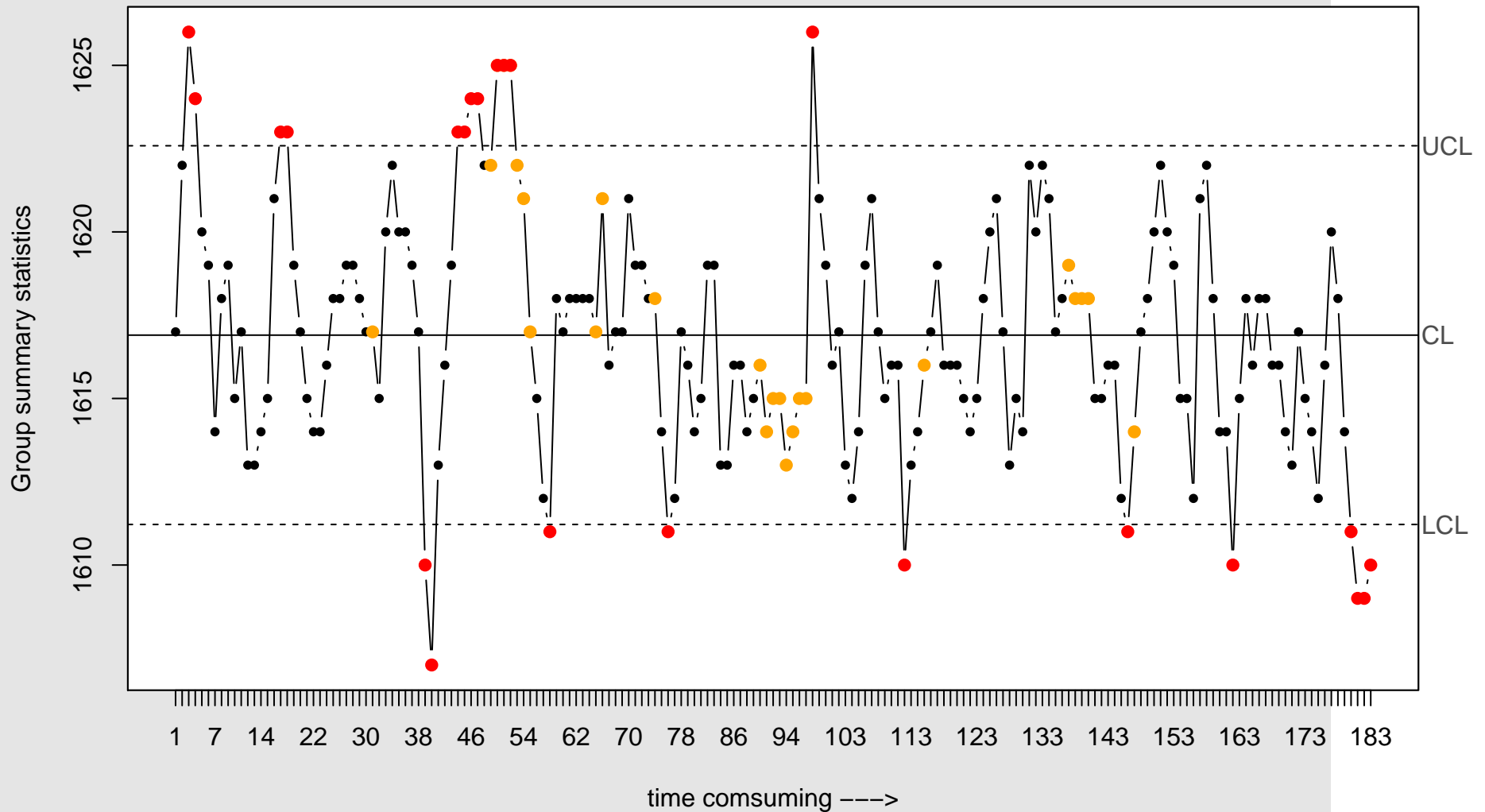
Number of groups = 183
Center = 1616.902   LCL = 1611.217   Number beyond limits = 23
StdDev = 1.894825   UCL = 1622.586   Number violating runs = 25

89th column point of this product

Group summary statistics

UCL
CL
LCL

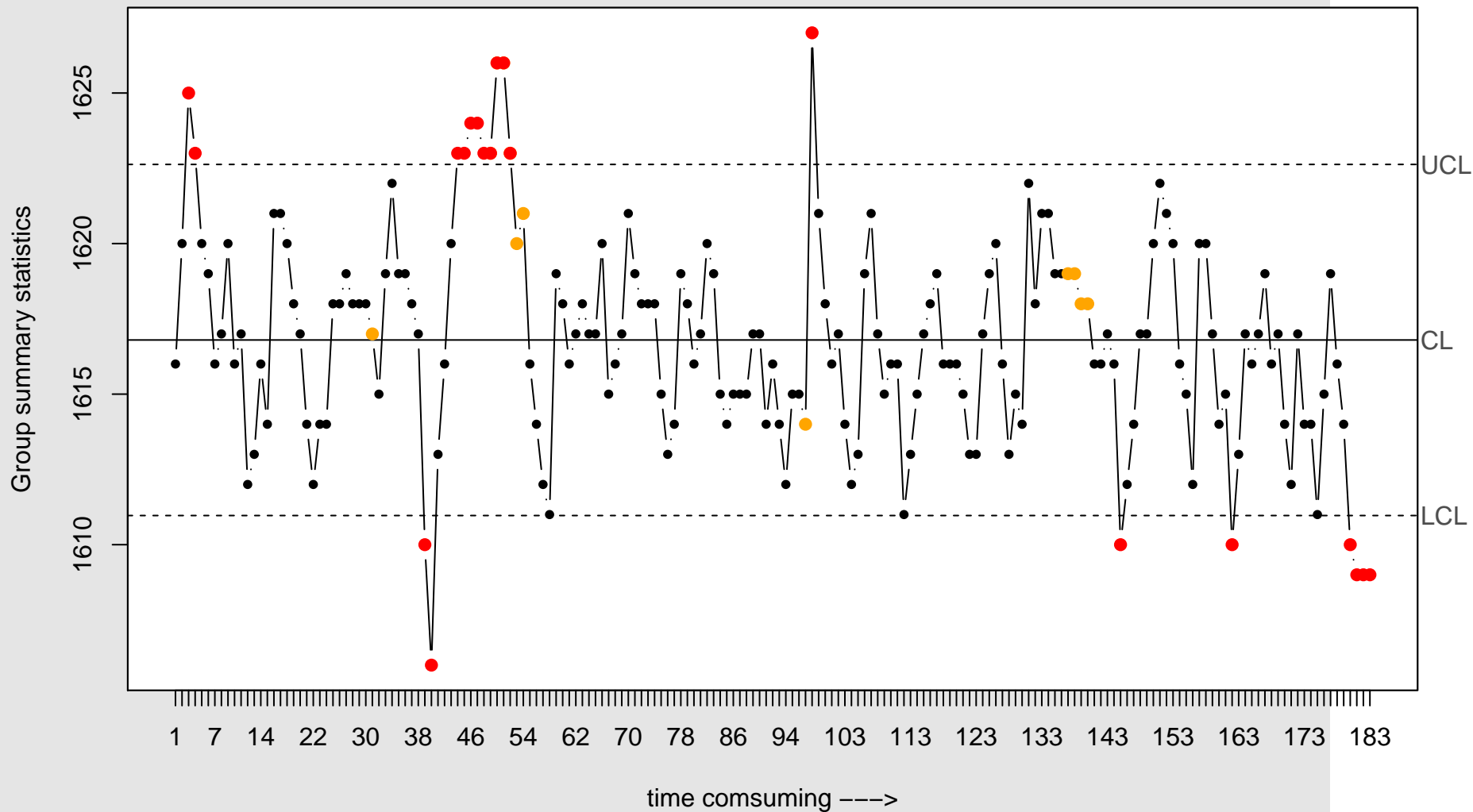time comsuming –––>

Number of groups = 183
Center = 1616.798
StdDev = 1.943535

LCL = 1610.967
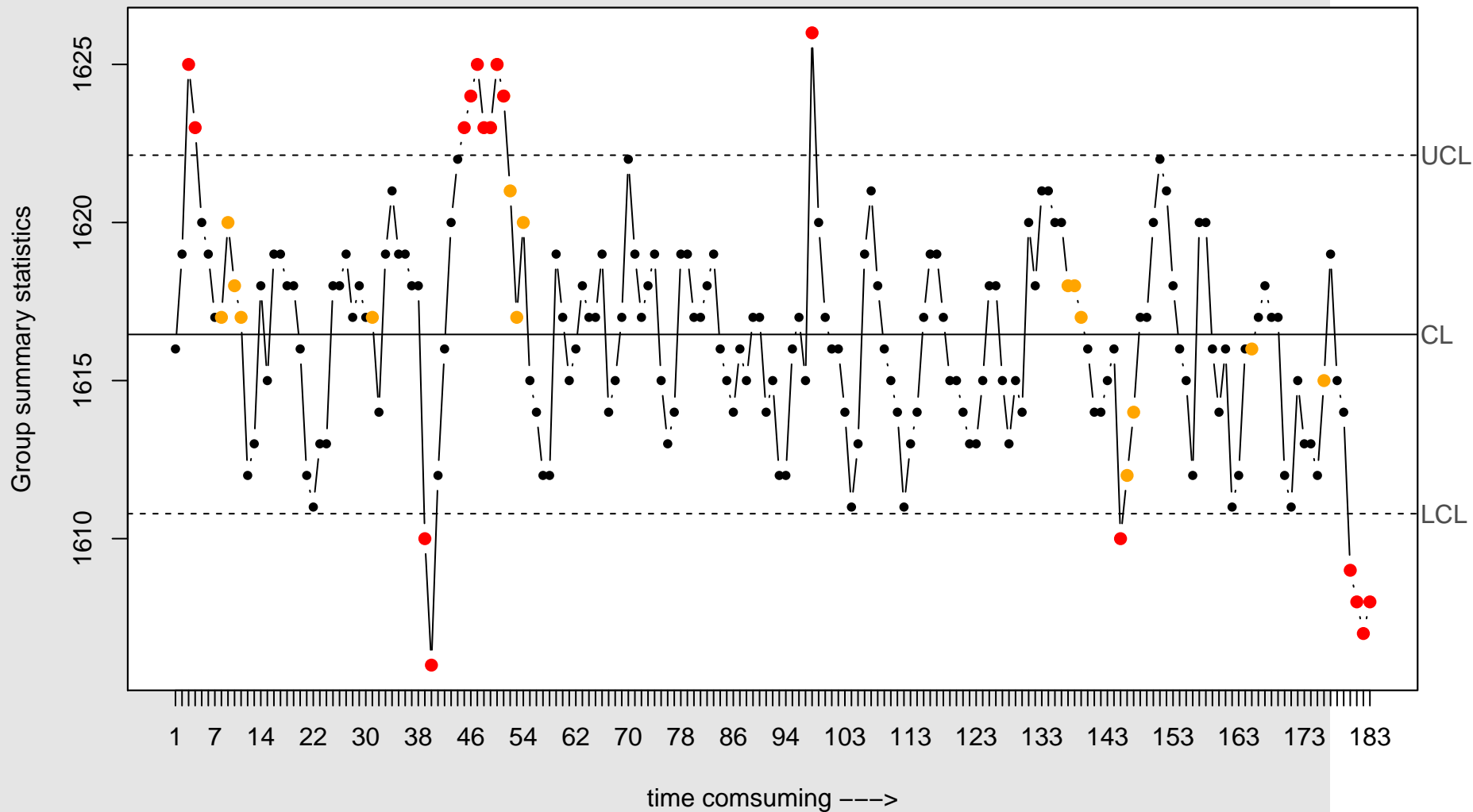UCL = 1622.628

Number beyond limits = 20
Number violating runs = 12

90th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1616.459   LCL = 1610.789   Number beyond limits = 17
StdDev = 1.889954   UCL = 1622.129   Number violating runs = 18

91th column point of this product

Group summary statistics

time comsuming ---->
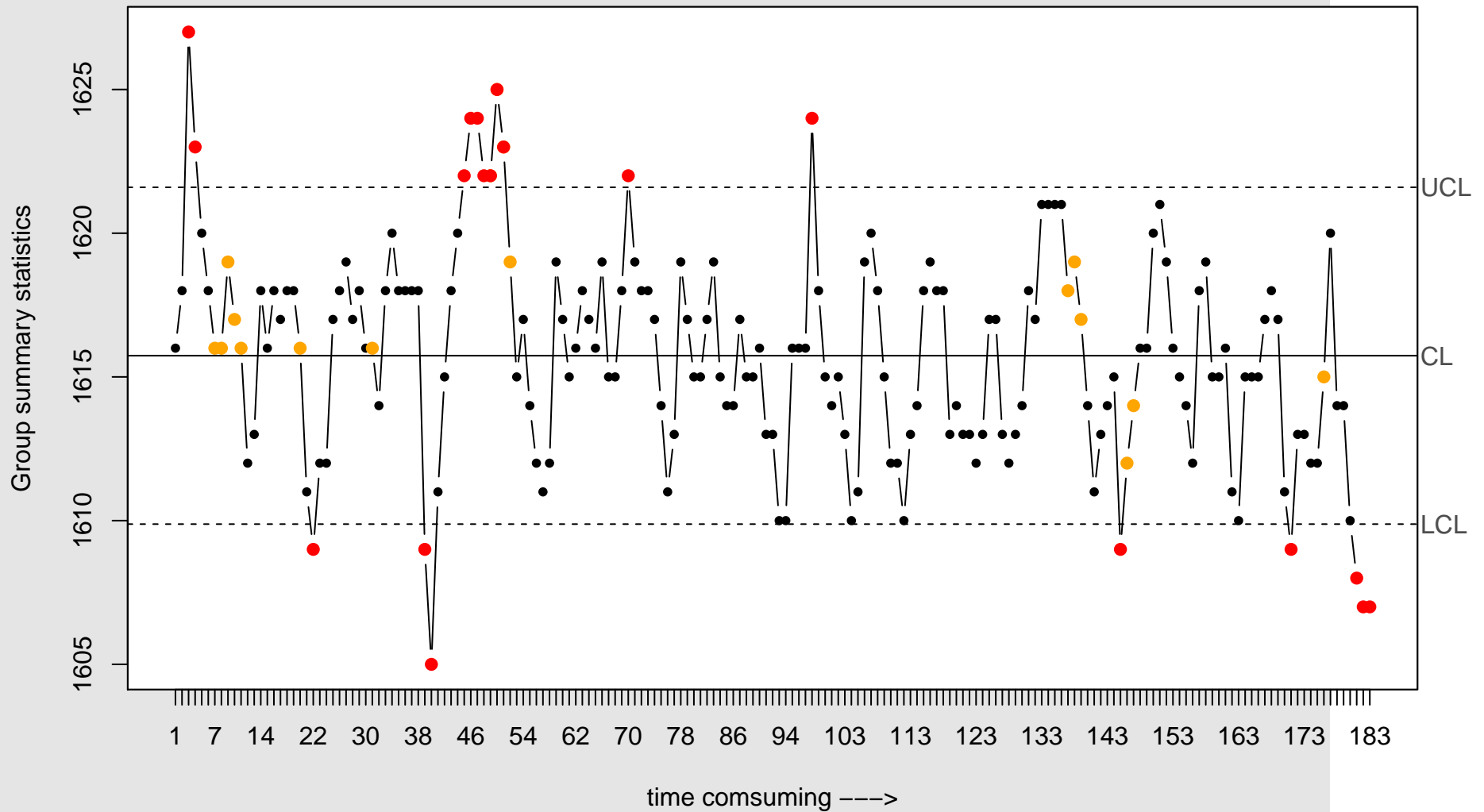
Number of groups = 183
Center = 1615.738   LCL = 1609.878   Number beyond limits = 19
StdDev = 1.953277   UCL = 1621.598   Number violating runs = 17

92th column point of this product

Group summary statistics

time comsuming ---->
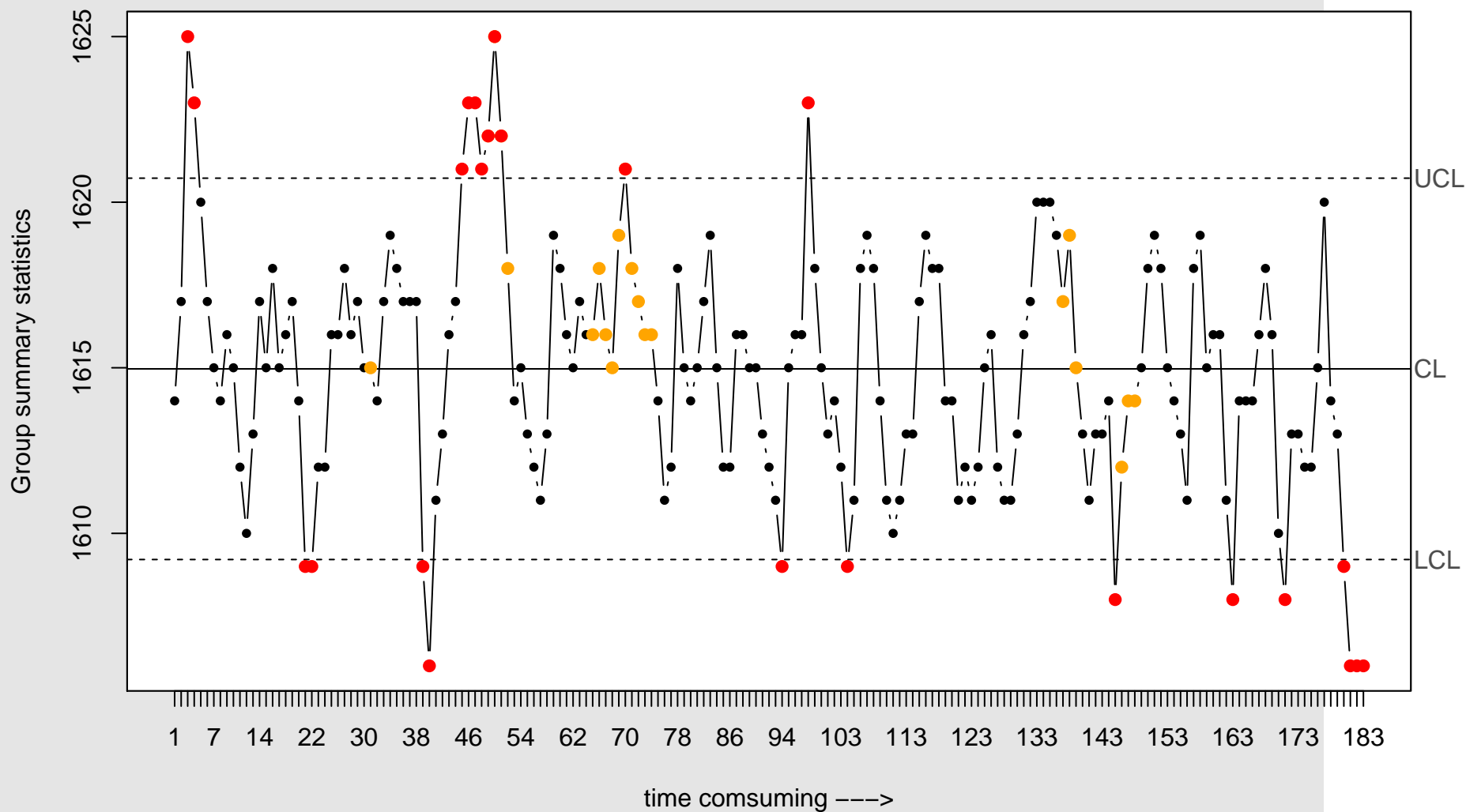
Number of groups = 183
Center = 1614.967   LCL = 1609.21   Number beyond limits = 24
StdDev = 1.91918   UCL = 1620.725   Number violating runs = 21

93th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1614.137
StdDev = 1.899696

LCL = 1608.438
UCL = 1619.836

Number beyond limits = 20
Number violating runs = 25

94th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1613.23   LCL = 1607.34   Number beyond limits = 17
StdDev = 1.963019   UCL = 1619.119   Number violating runs = 21

95th column point of this product

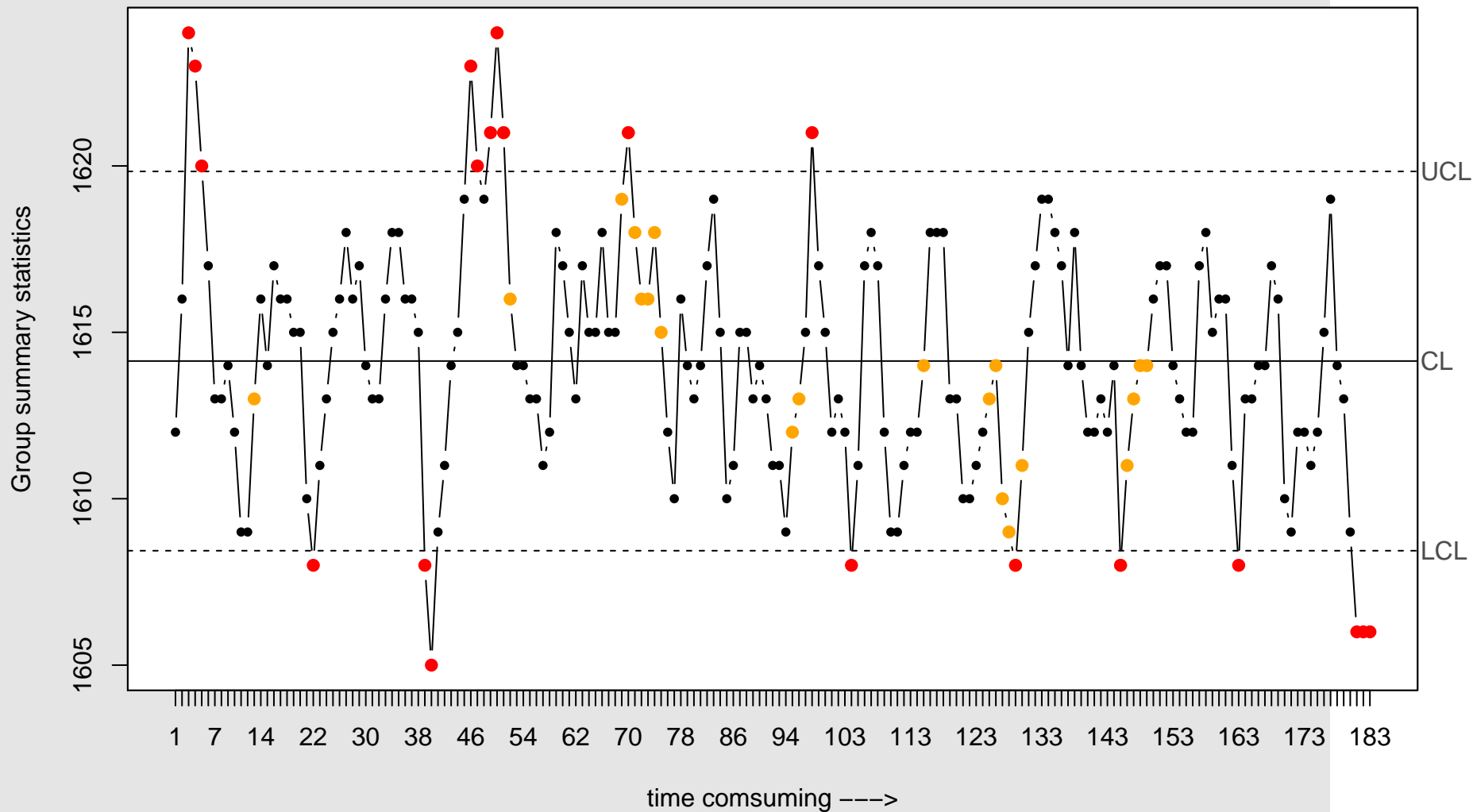Group summary statistics

UCL

CL

LCL

time comsuming ---->

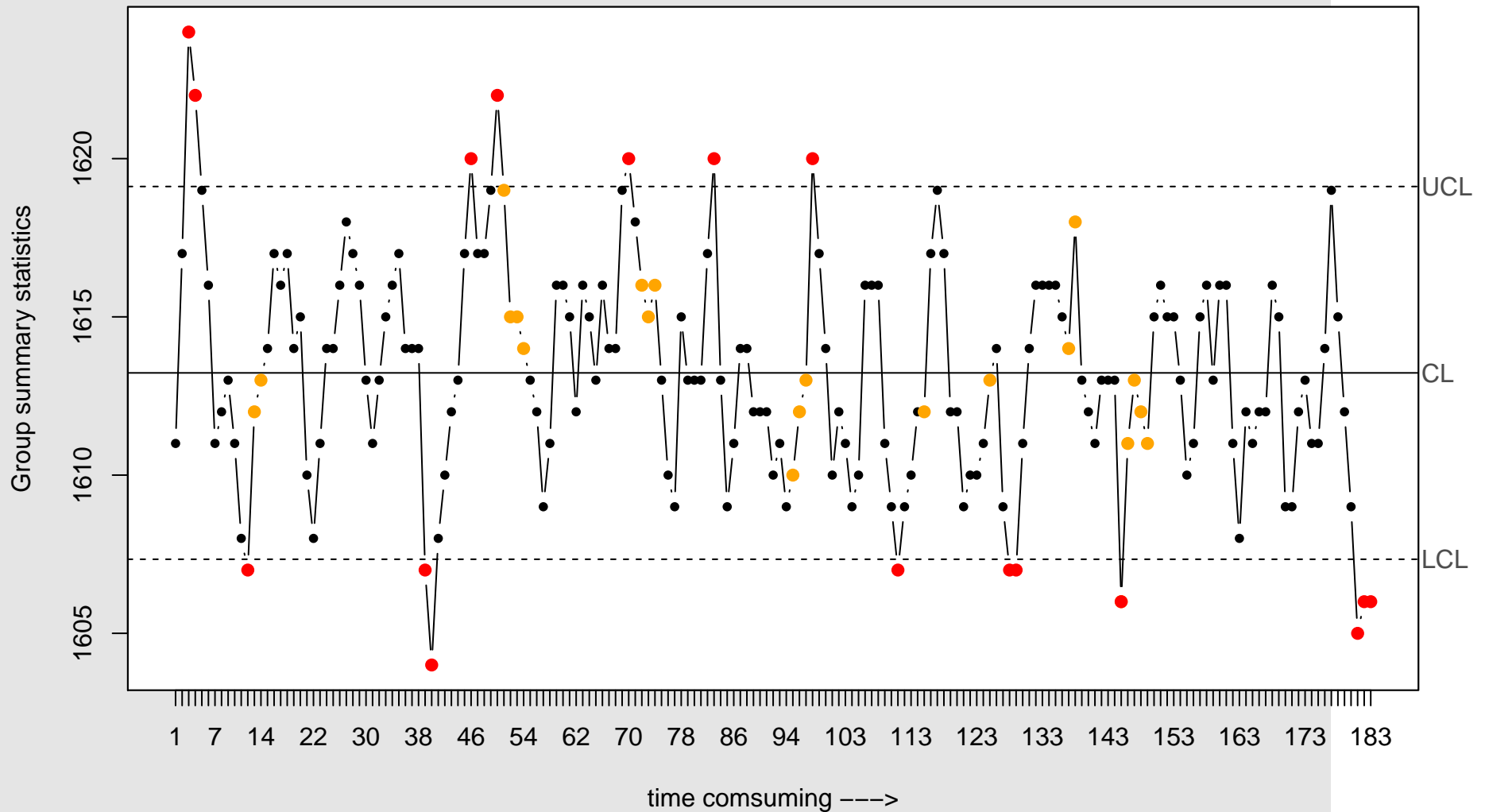Number of groups = 183
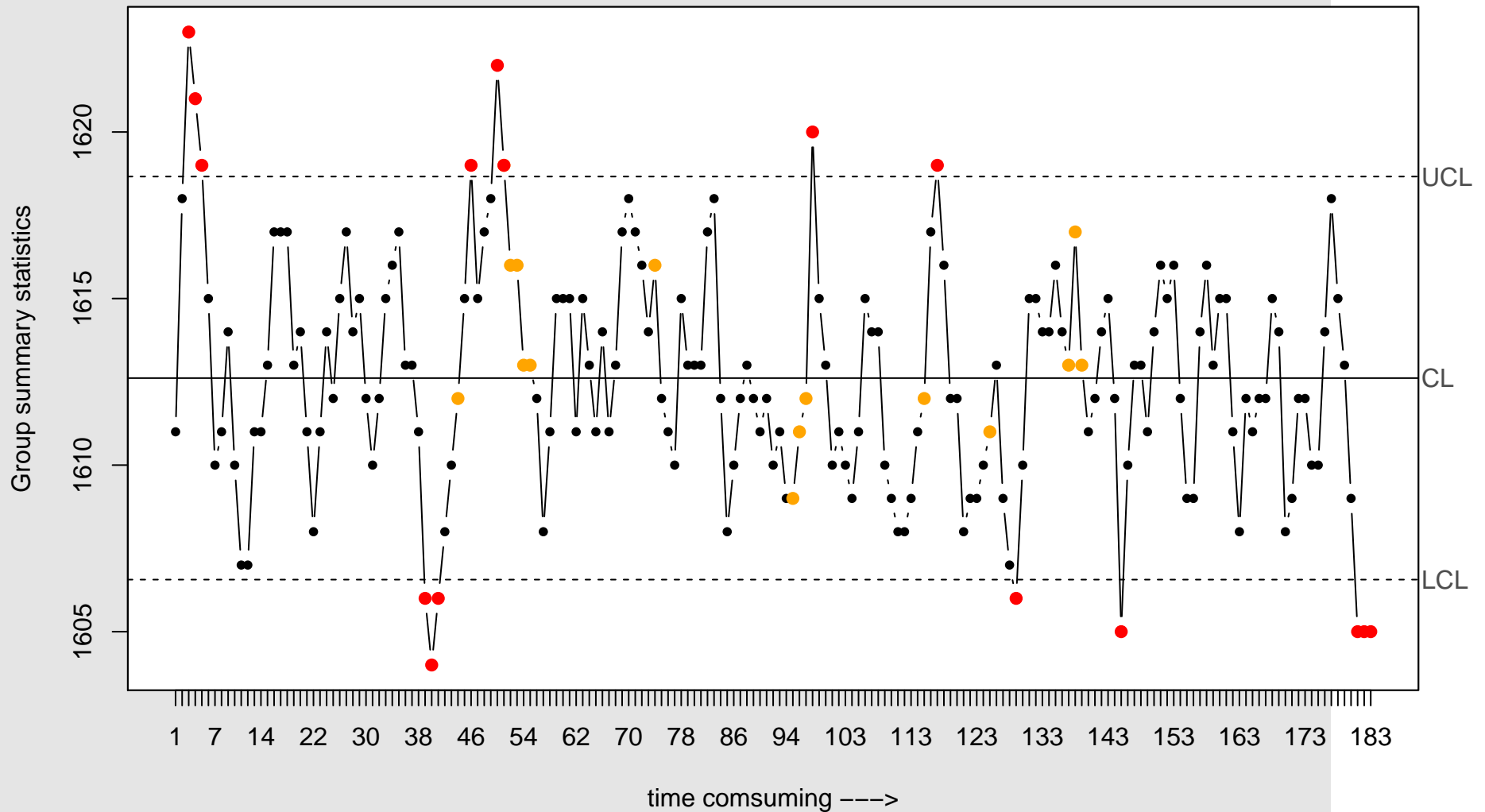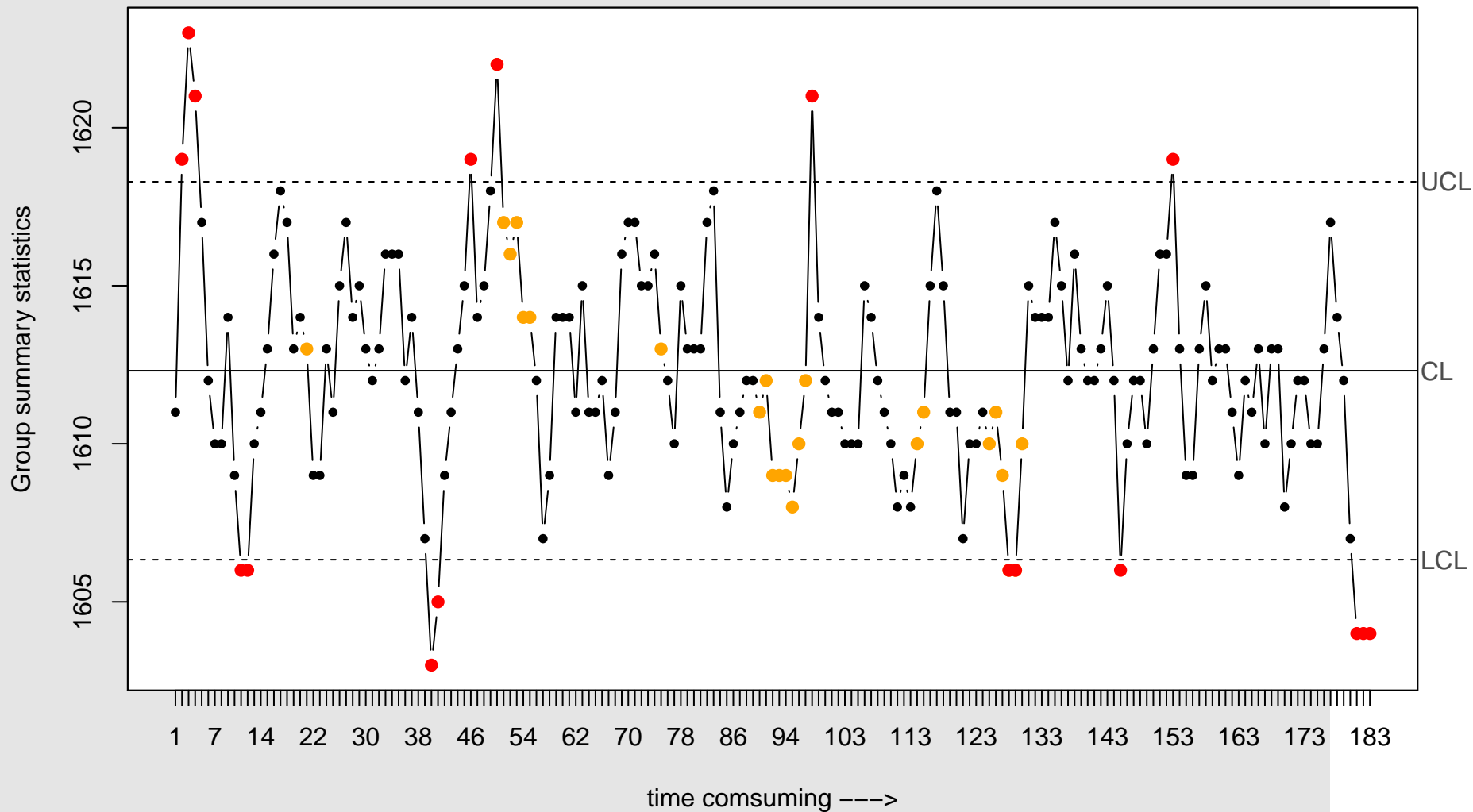Center = 1612.612
StdDev = 2.0166

LCL = 1606.562
UCL = 1618.662

Number beyond limits = 16
Number violating runs = 15

96th column point of this product

Number of groups = 183
Center = 1612.311   LCL = 1606.335   Number beyond limits = 17
StdDev = 1.992245   UCL = 1618.288   Number violating runs = 24

97th column point of this product

Group summary statistics

1620
1615
1610
1605

UCL
CL
LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming –––>

Number of groups = 183
Center = 1611.721   LCL = 1605.745   Number beyond limits = 12
StdDev = 1.992245   UCL = 1617.698   Number violating runs = 23

98th column point of this product

Group summary statistics

time comsuming ----->

Number of groups = 183
Center = 1611.59
StdDev = 1.987374

LCL = 1605.628
UCL = 1617.552

Number beyond limits = 15
Number violating runs = 13

99th column point of this product

Group summary statistics

1620
1615
1610
1605

UCL
CL
LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ——->

Number of groups = 183
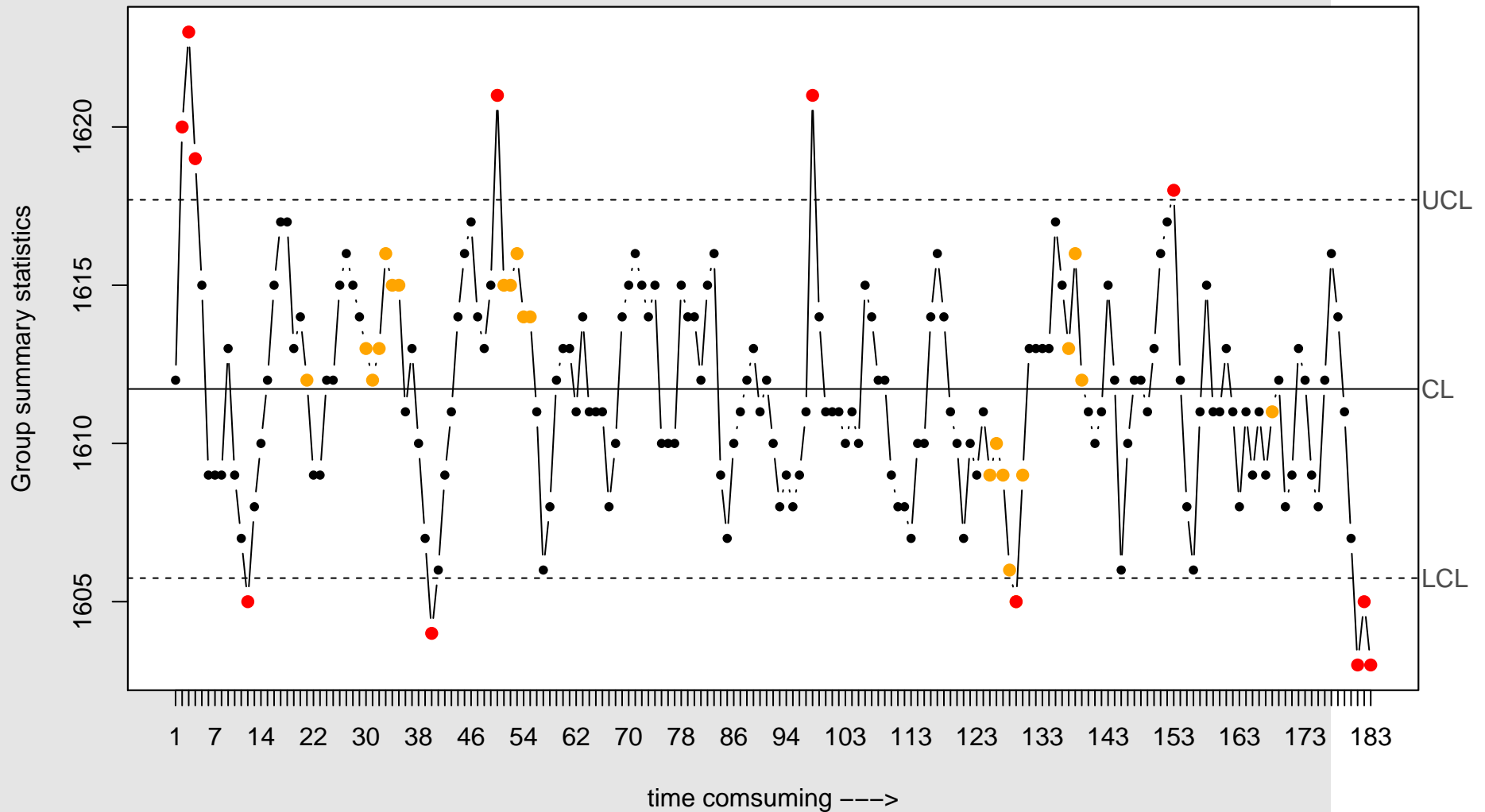Center = 1611.574
StdDev = 1.963019

LCL = 1605.685
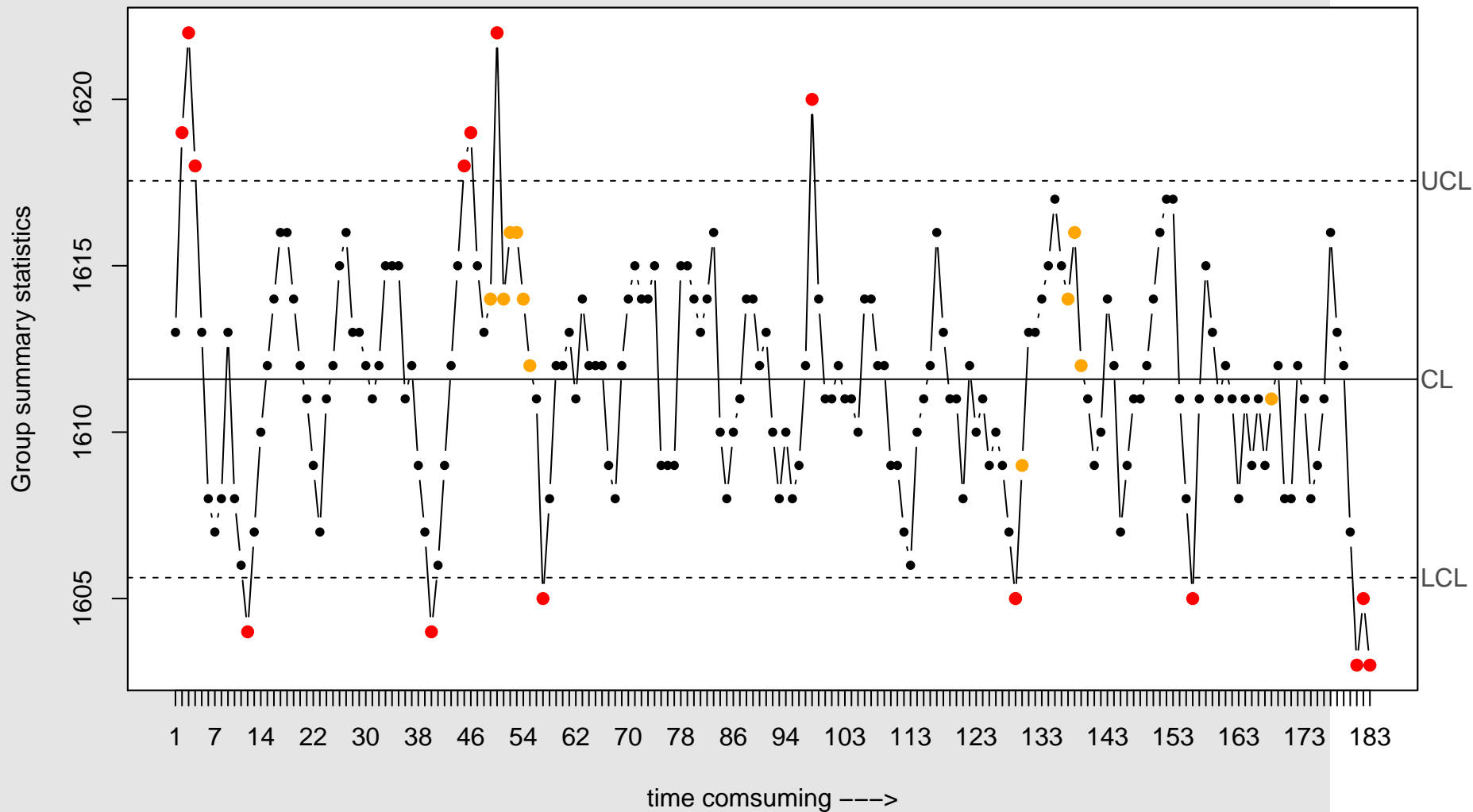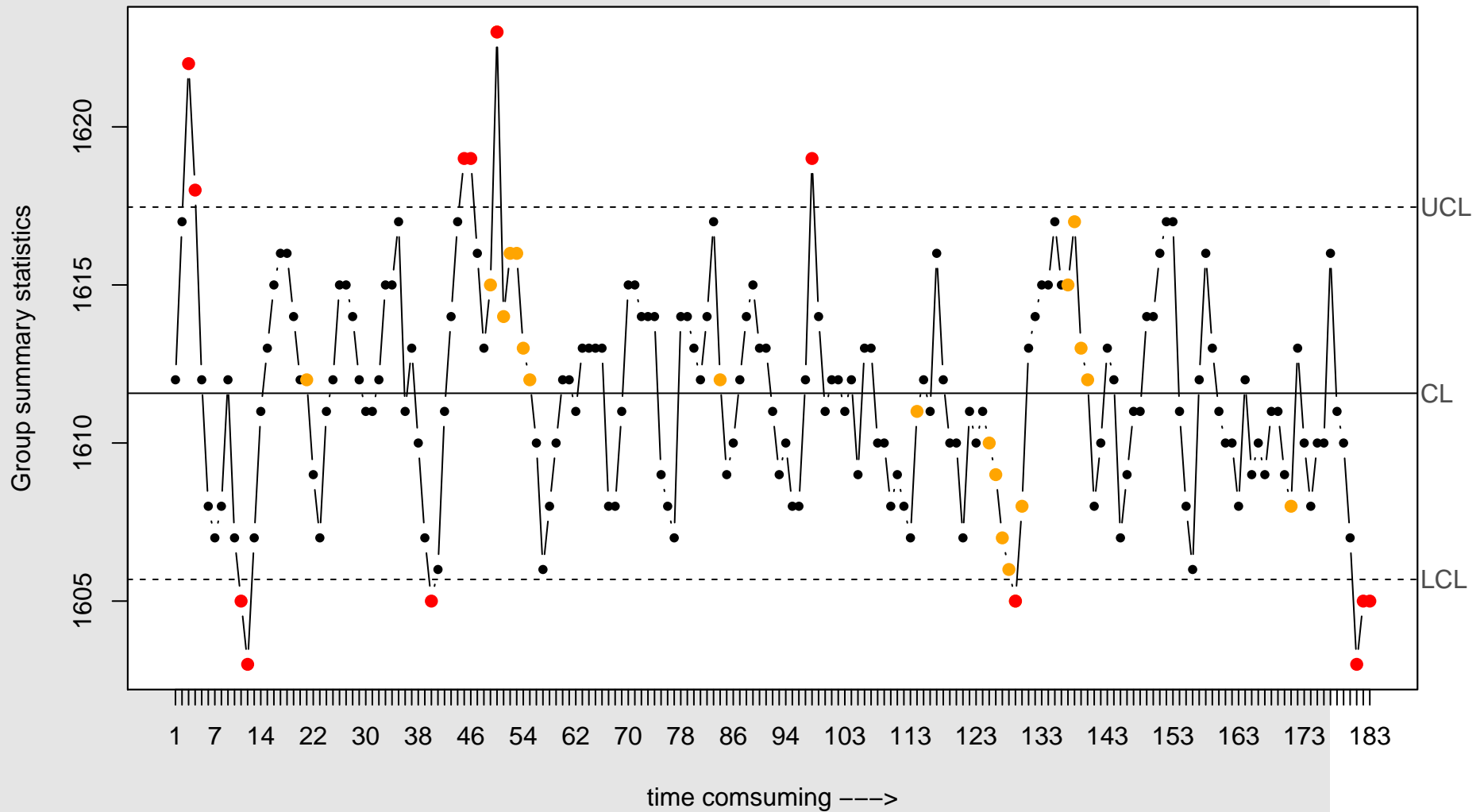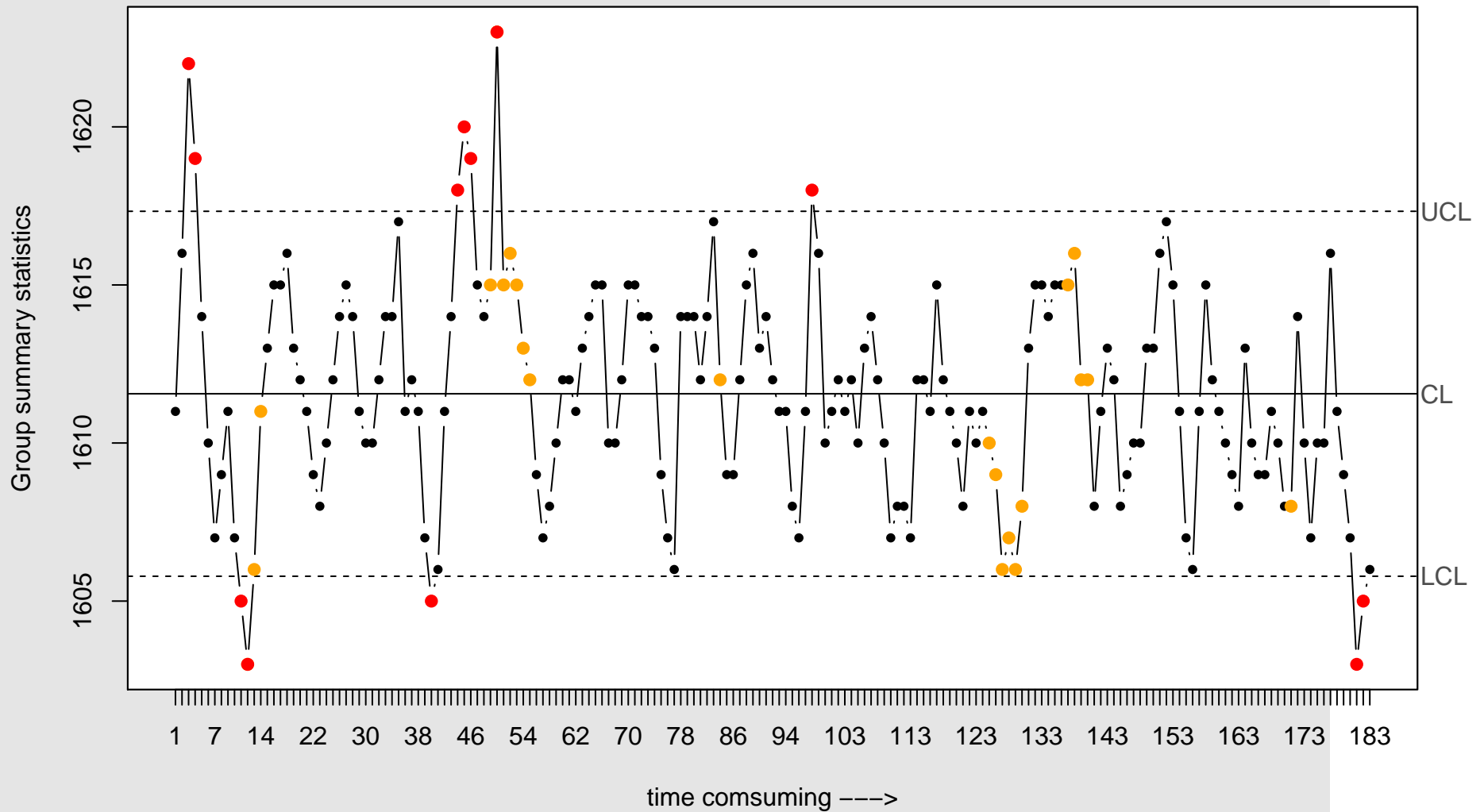UCL = 1617.463

Number beyond limits = 13
Number violating runs = 21

100th column point of this product

Number of groups = 183
Center = 1611.557   LCL = 1605.785   Number beyond limits = 12
StdDev = 1.924051   UCL = 1617.33   Number violating runs = 22

101th column point of this product

Group summary statistics

time comsuming ---->
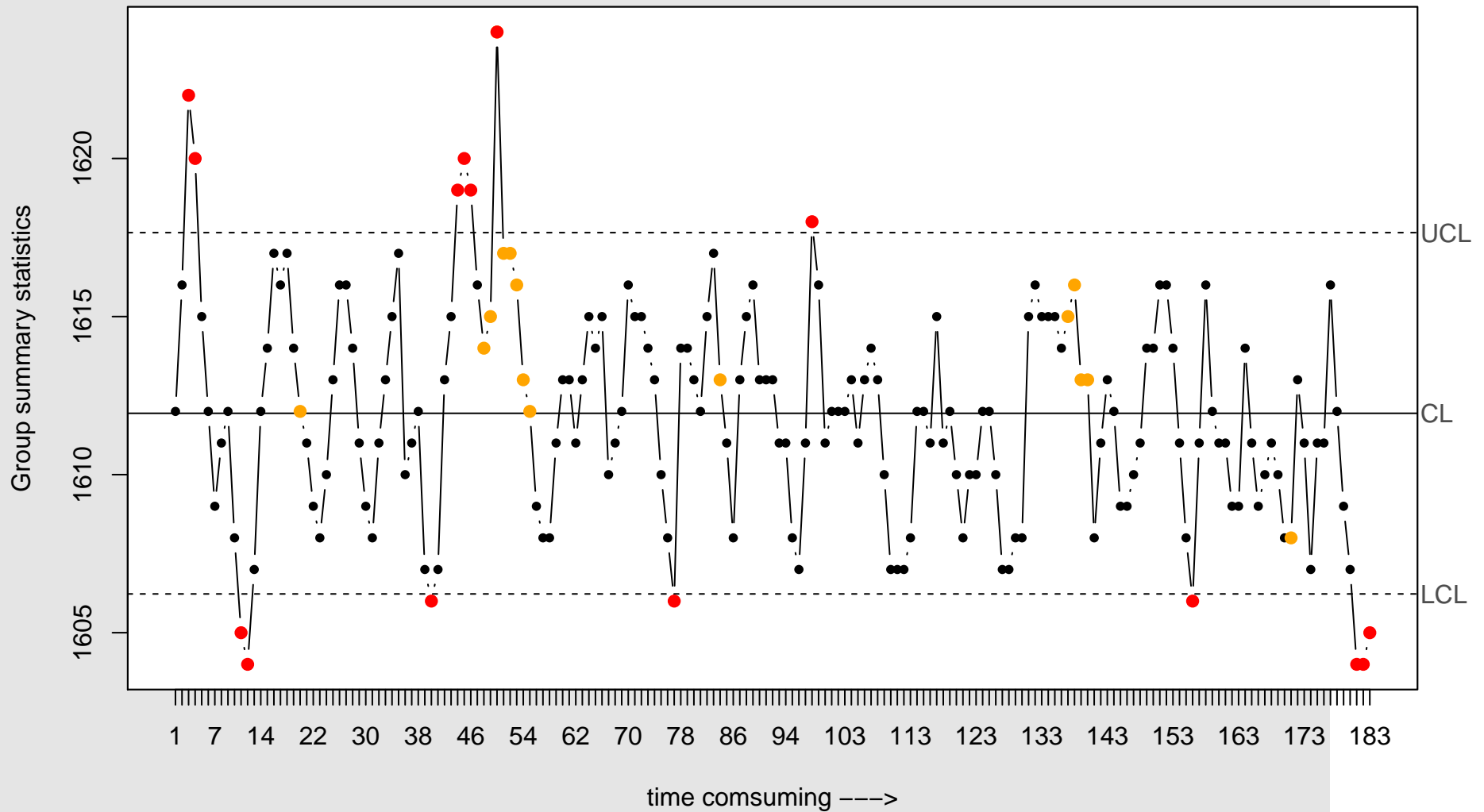
Number of groups = 183
Center = 1611.94
StdDev = 1.904567

LCL = 1606.226
UCL = 1617.654

Number beyond limits = 15
Number violating runs = 15

102th column point of this product

Group summary statistics

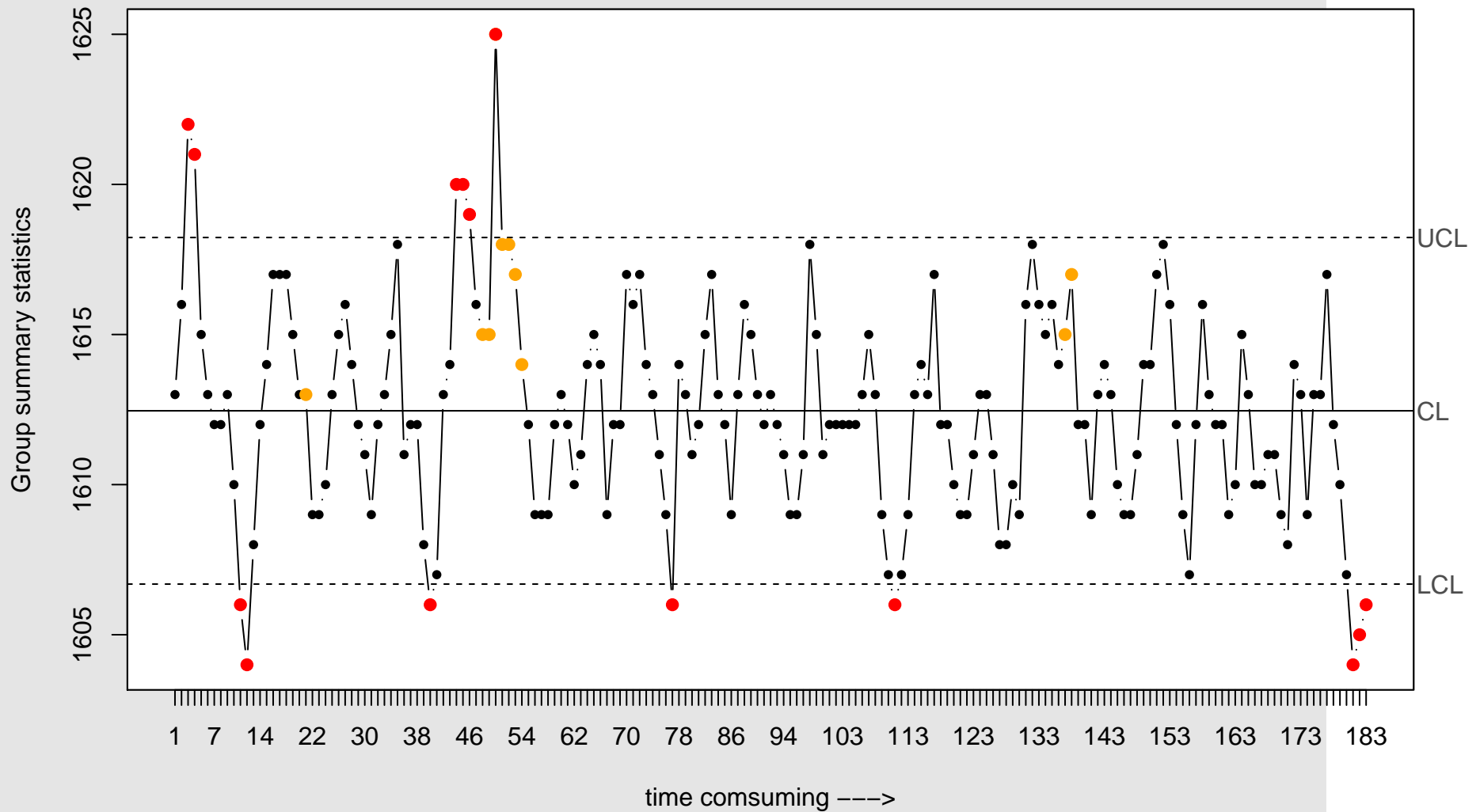time comsuming ---->

Number of groups = 183
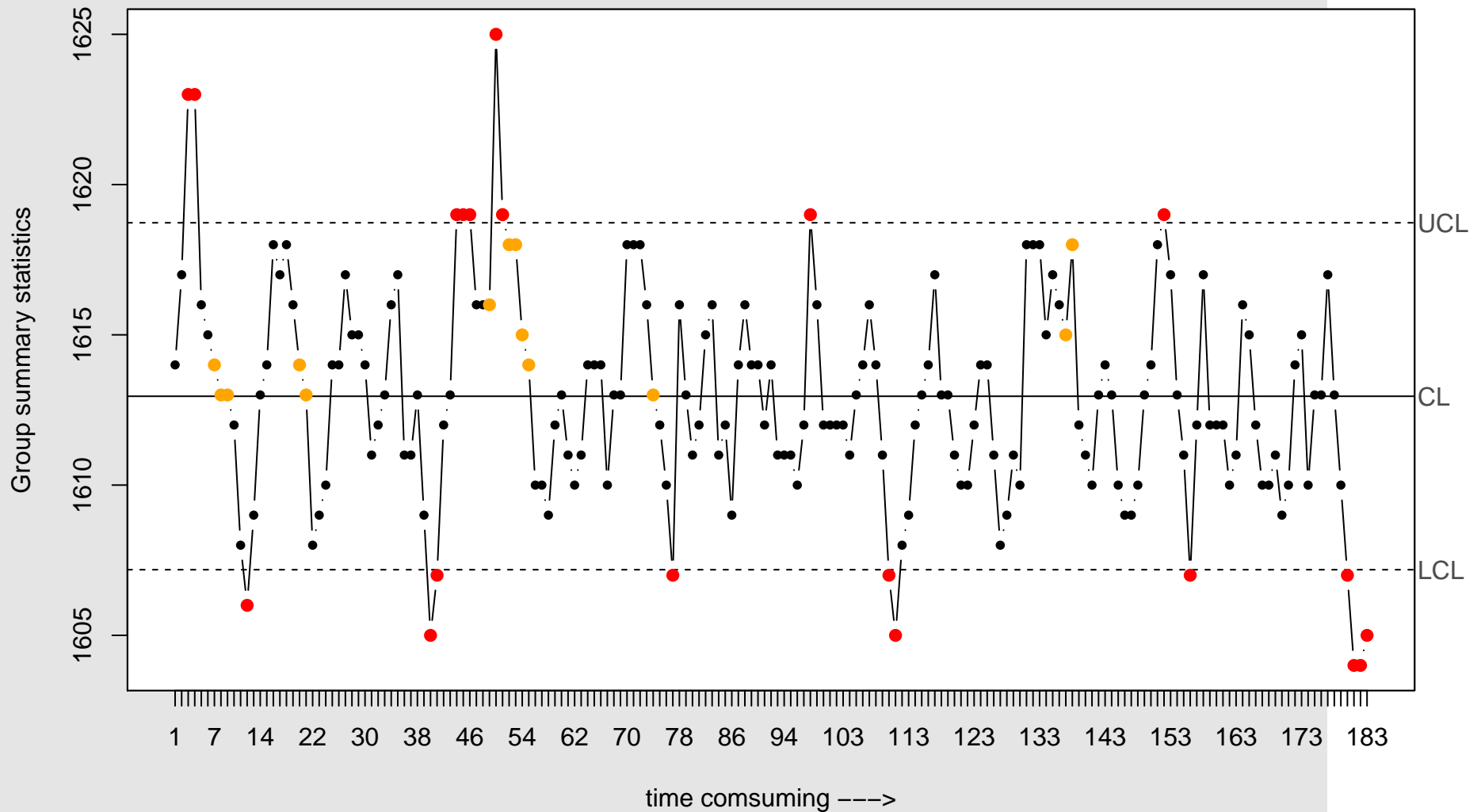Center = 1612.459
StdDev = 1.924051

LCL = 1606.687
UCL = 1618.231

Number beyond limits = 14
Number violating runs = 10

103th column point of this product

Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1612.956   LCL = 1607.184   Number beyond limits = 20
StdDev = 1.924051   UCL = 1618.728   Number violating runs = 15

104th column point of this product
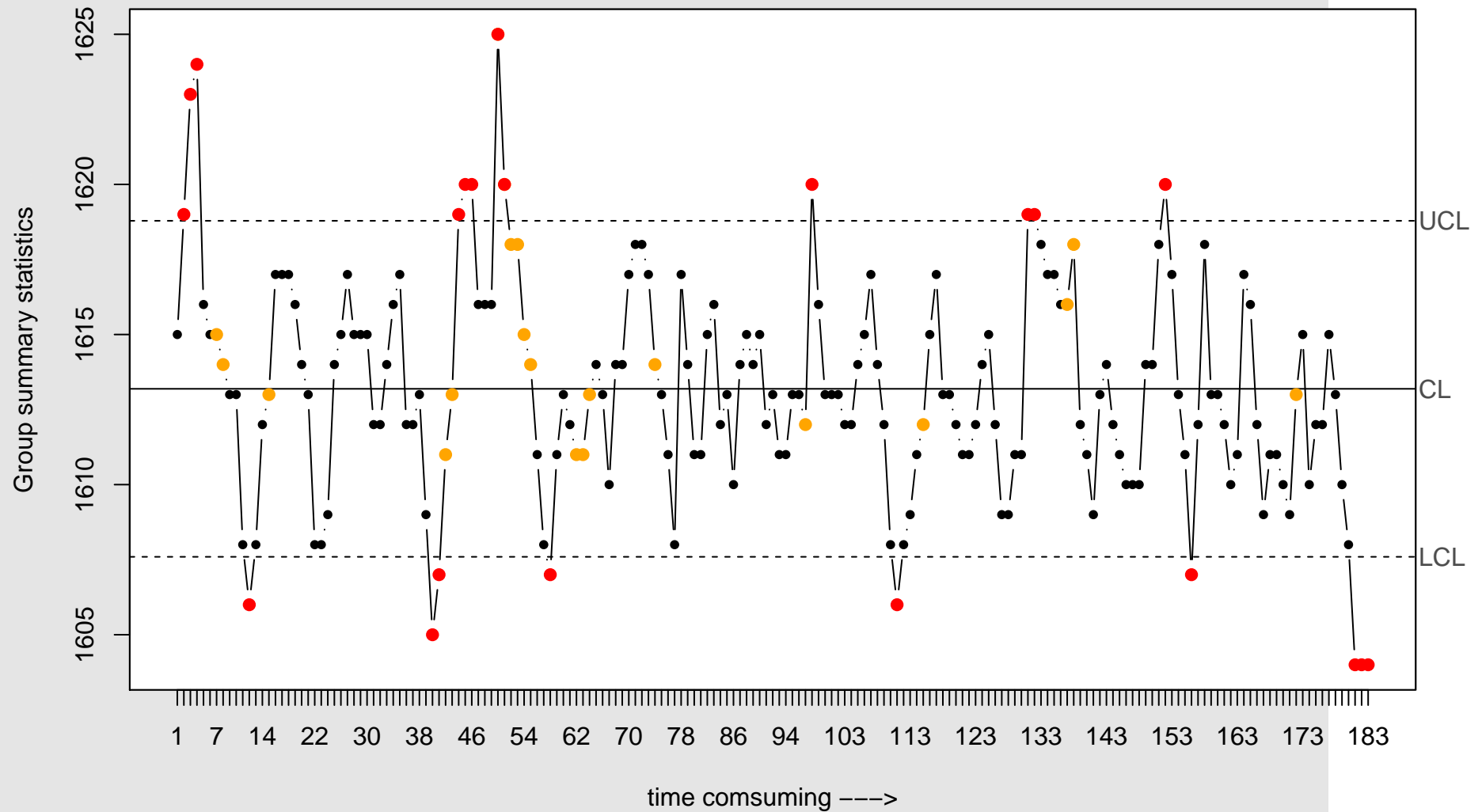
Number of groups = 183
Center = 1613.191
StdDev = 1.865599

LCL = 1607.594
UCL = 1618.788

Number beyond limits = 21
Number violating runs = 20

105th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ---->

Number of groups = 183
Center = 1613.464   LCL = 1607.634   Number beyond limits = 14
StdDev = 1.943535   UCL = 1619.295   Number violating runs = 27

106th column point of this product

Group summary statistics

UCL

CL

LCL

time comsuming ---->
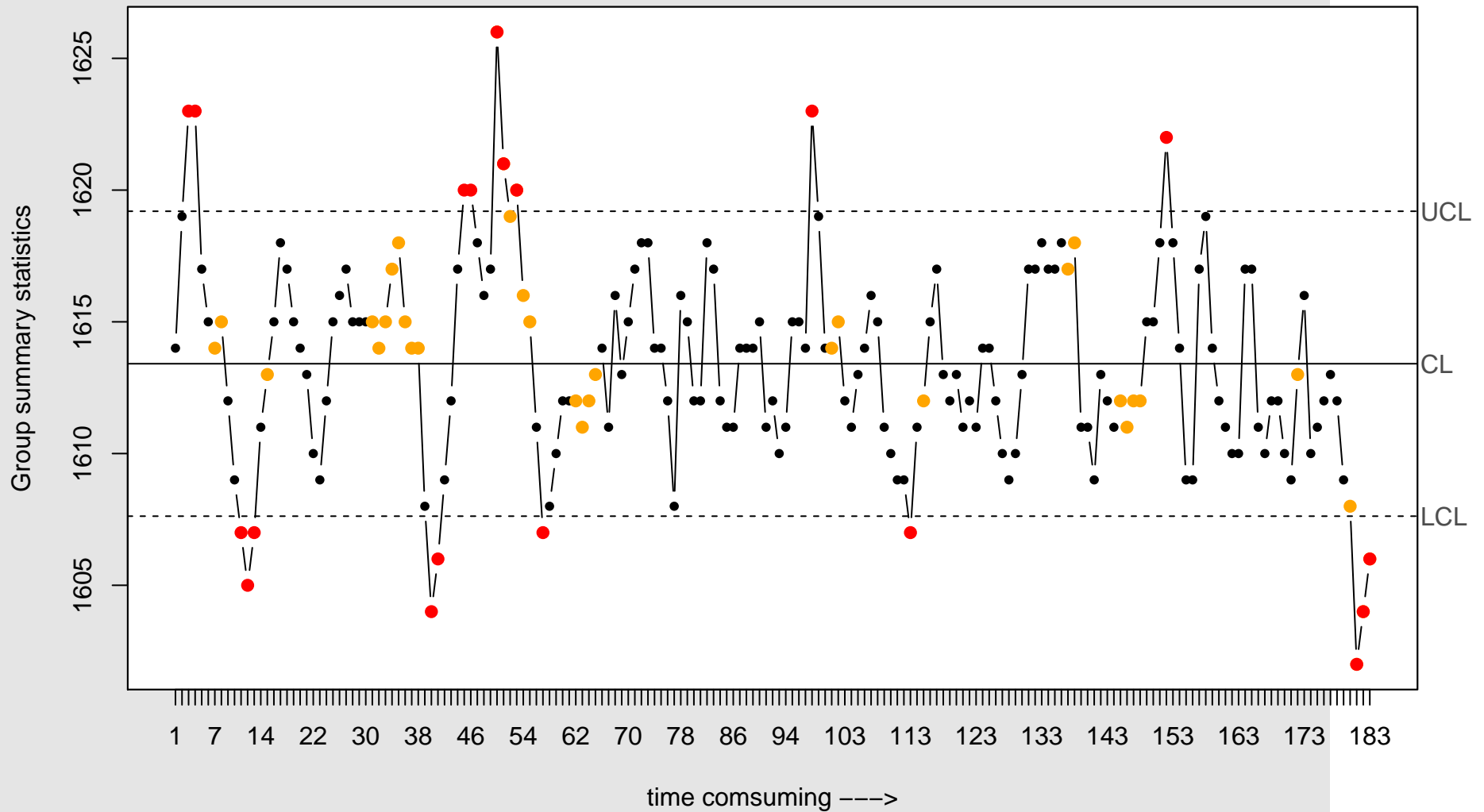
Number of groups = 183
Center = 1613.41
StdDev = 1.928922

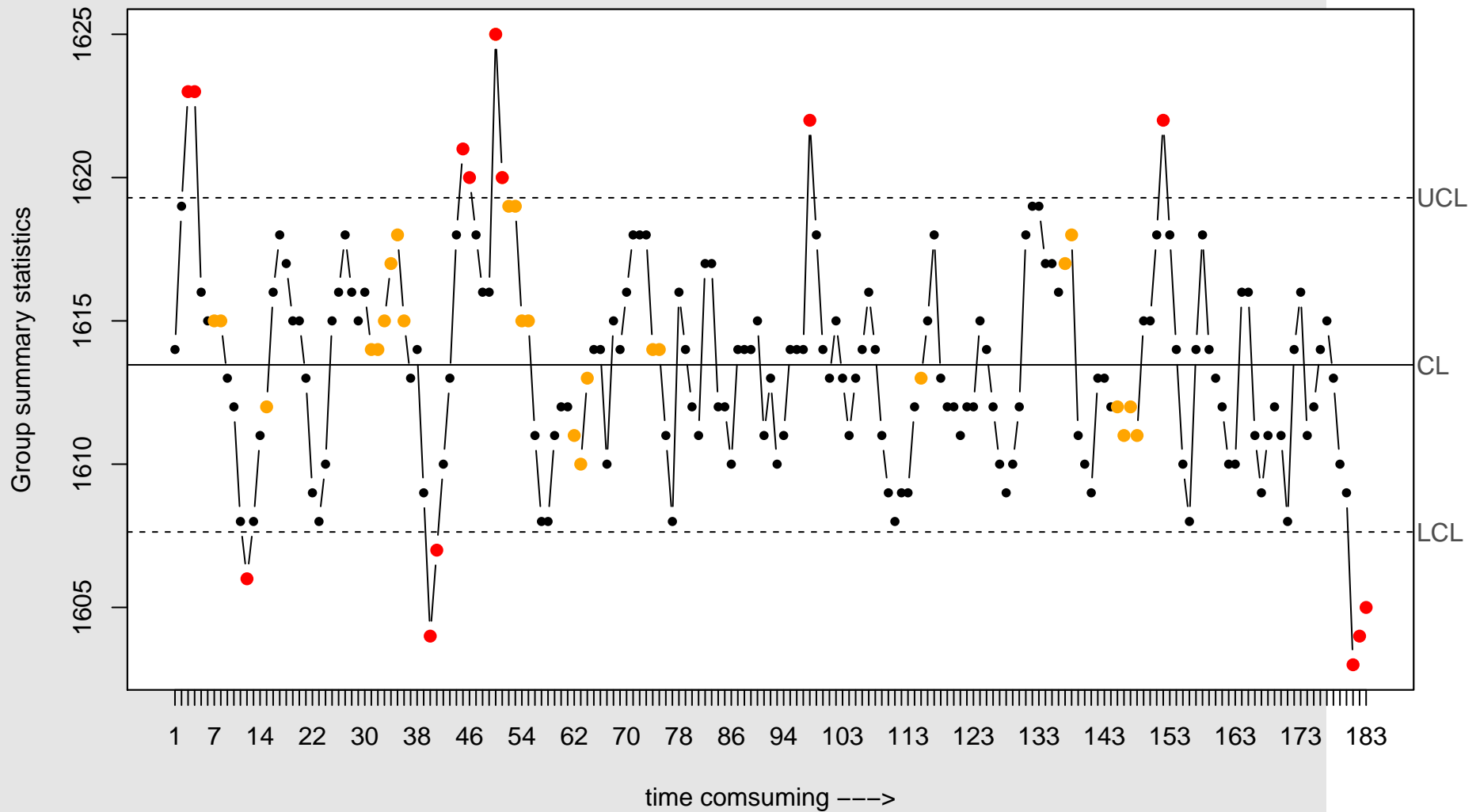LCL = 1607.623
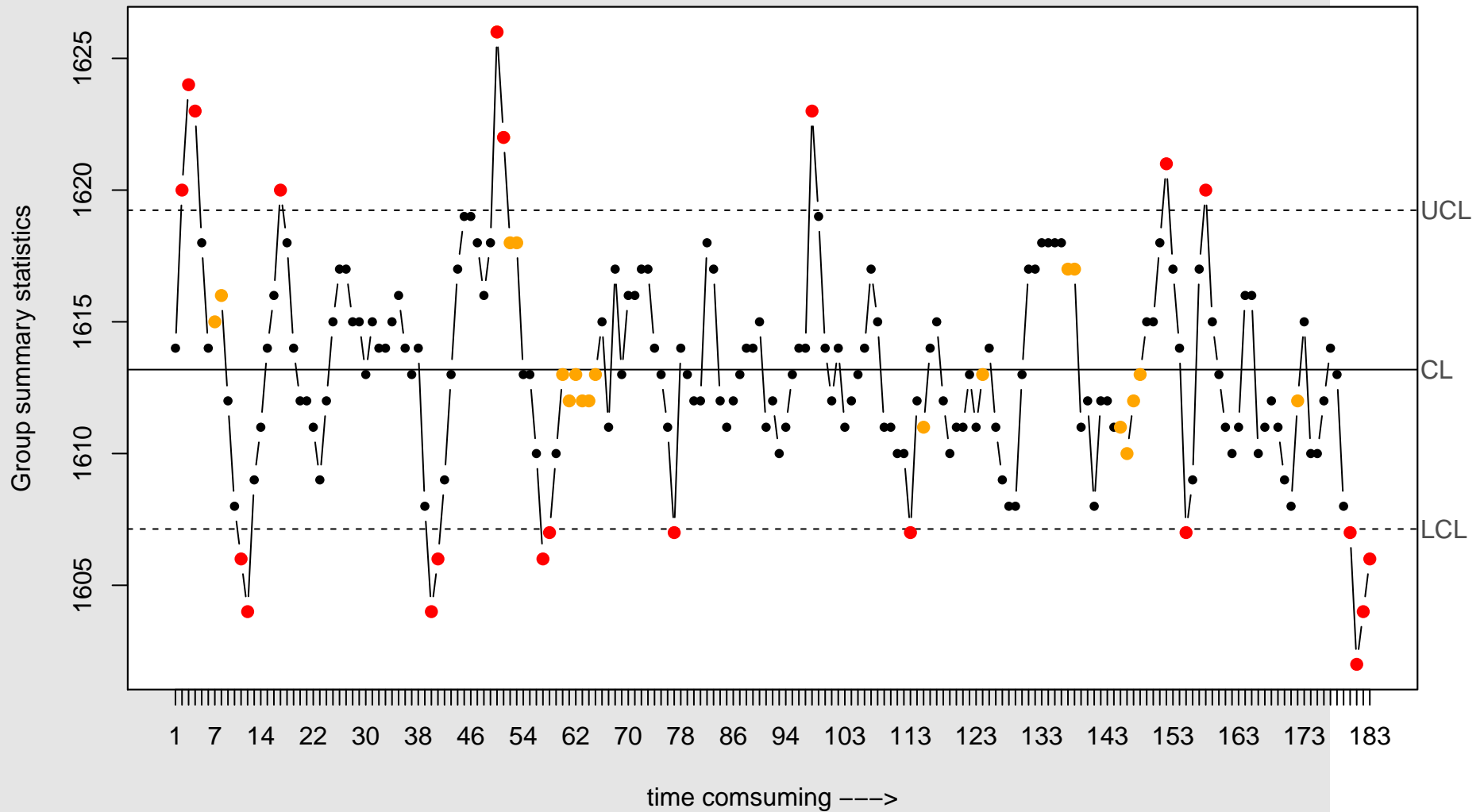UCL = 1619.197

Number beyond limits = 19
Number violating runs = 35

107th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1613.186   LCL = 1607.136   Number beyond limits = 22
StdDev = 2.0166   UCL = 1619.236   Number violating runs = 21

108th column point of this product

Group summary statistics

1625
1620
1615
1610
1605

UCL
CL
LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ---->
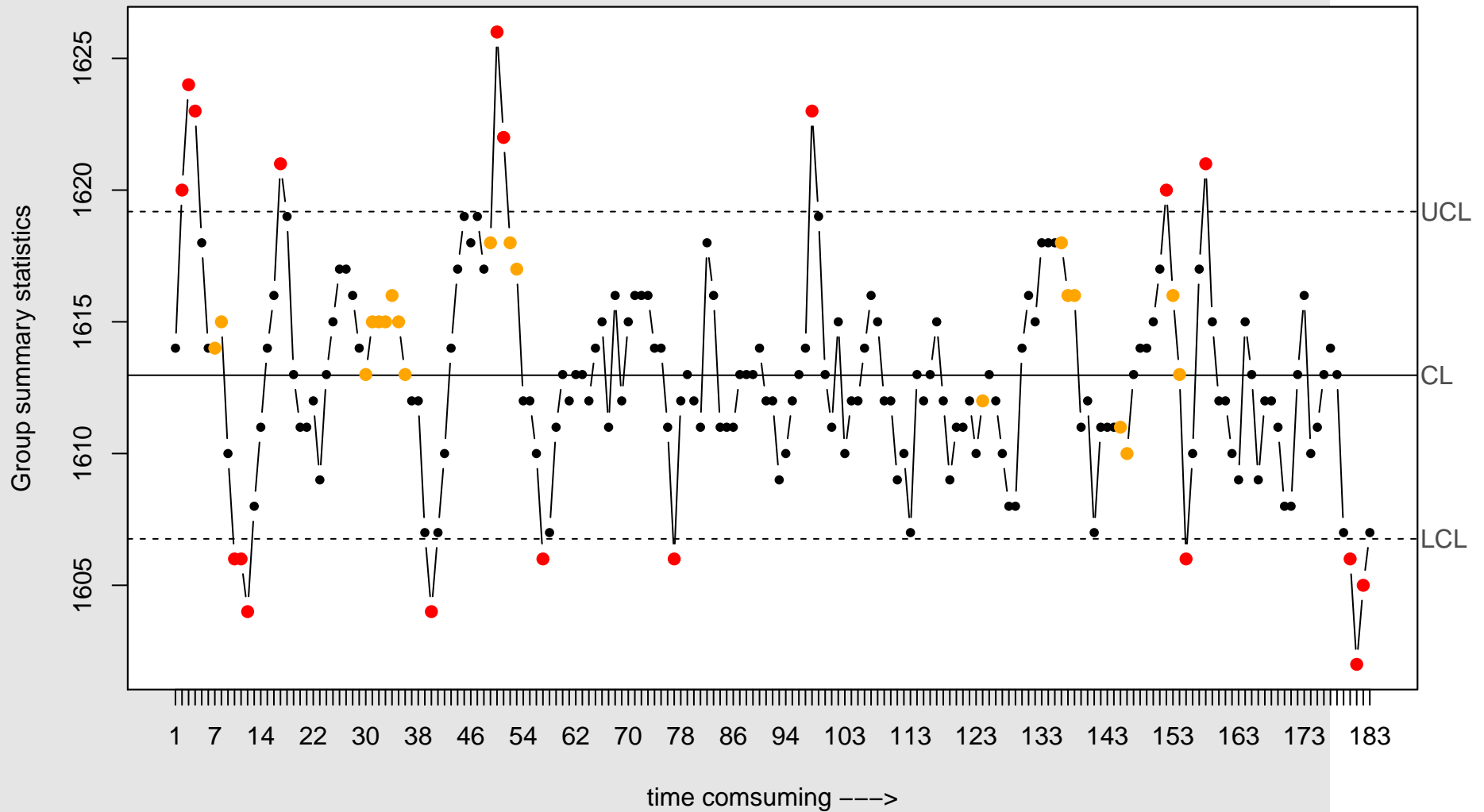
Number of groups = 183
Center = 1612.973   LCL = 1606.762   Number beyond limits = 19
StdDev = 2.070182   UCL = 1619.183   Number violating runs = 22

109th column point of this product

Group summary statistics

time comsuming −−−>
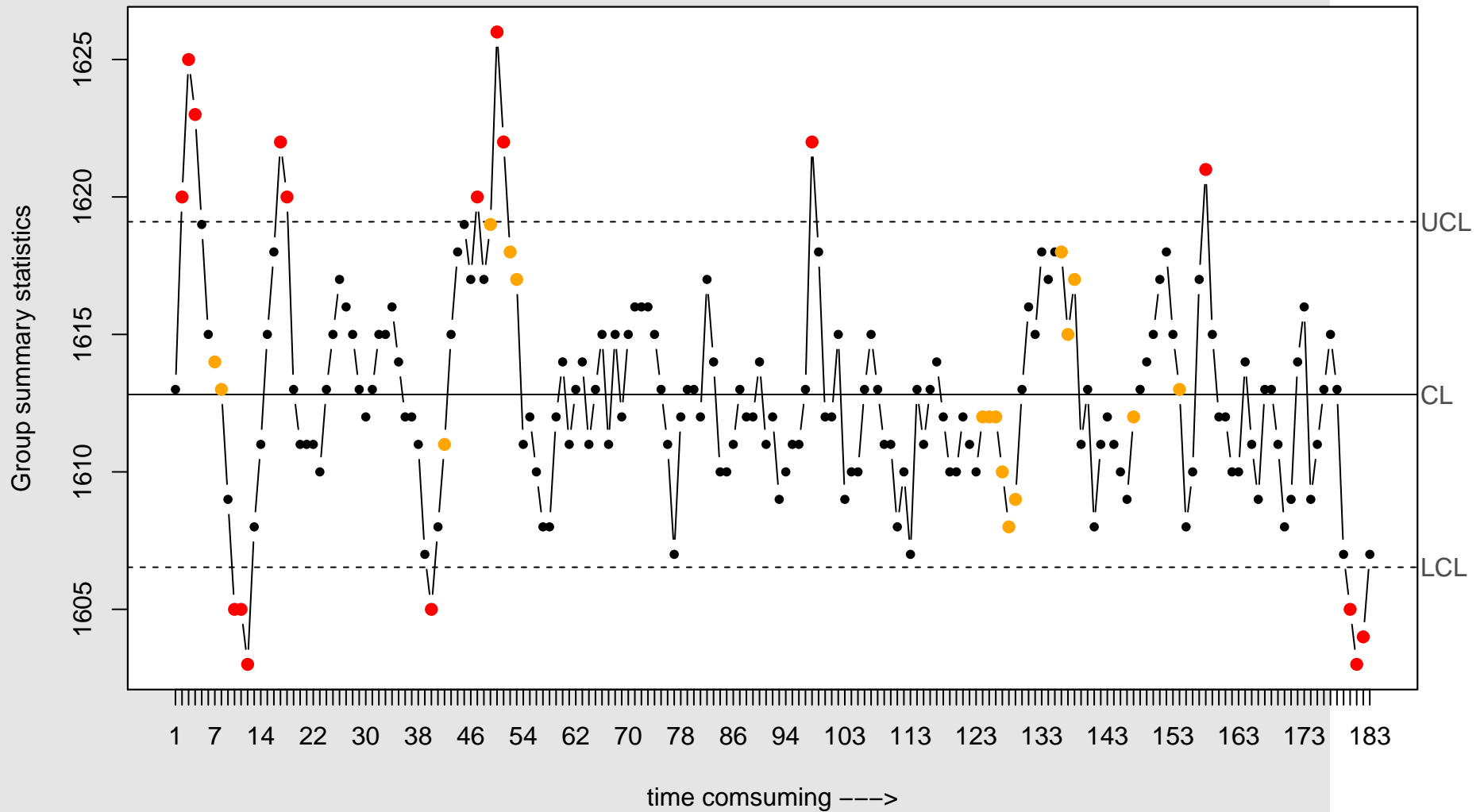
Number of groups = 183
Center = 1612.814
StdDev = 2.094537

LCL = 1606.531
UCL = 1619.098

Number beyond limits = 17
Number violating runs = 19

110th column point of this product

Group summary statistics

time comsuming ––––>
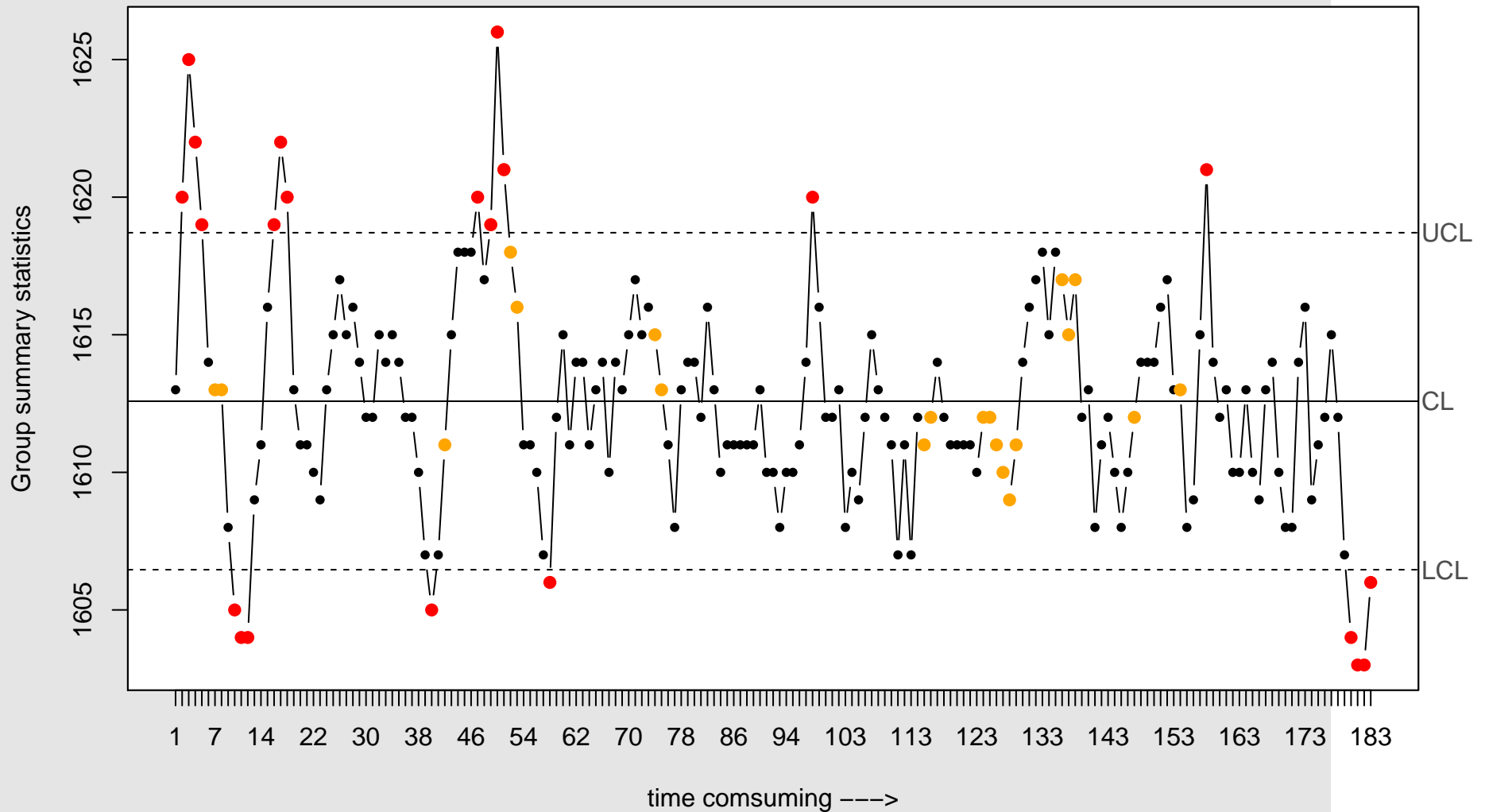
Number of groups = 183
Center = 1612.585   LCL = 1606.462   Number beyond limits = 22
StdDev = 2.040955   UCL = 1618.708   Number violating runs = 23

111th column point of this product

Group summary statistics

time comsuming --->

UCL

CL

LCL

1625
1620
1615
1610
1605

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

Number of groups = 183
Center = 1612.557   LCL = 1606.201   Number beyond limits = 25
StdDev = 2.118892   UCL = 1618.914   Number violating runs = 27

112th column point of this product

Group summary statistics

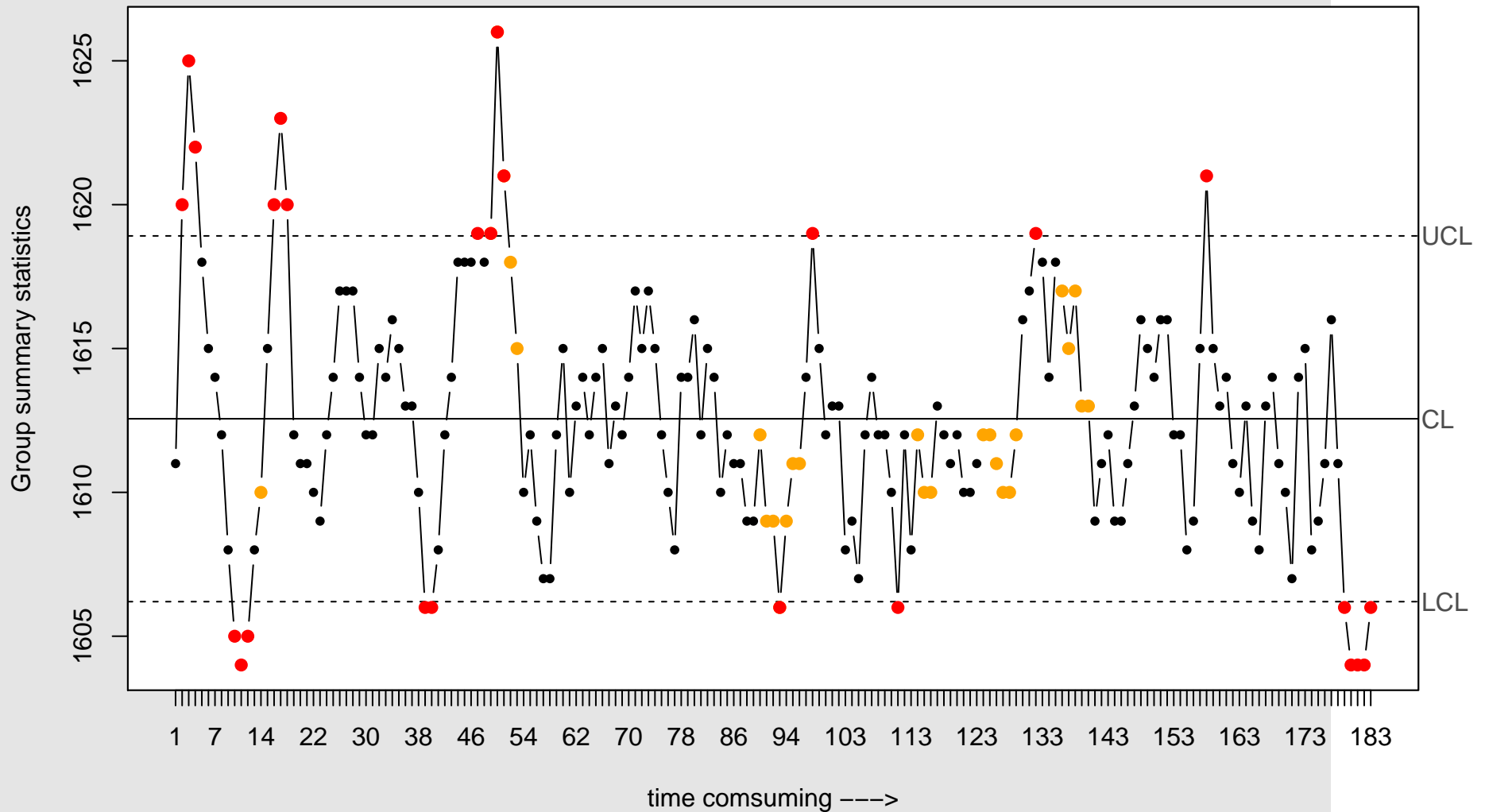time comsuming ---->

Number of groups = 183
Center = 1612.563
StdDev = 2.099408

LCL = 1606.265
UCL = 1618.861

Number beyond limits = 24
Number violating runs = 21

113th column point of this product

Group summary statistics

UCL

CL

LCL

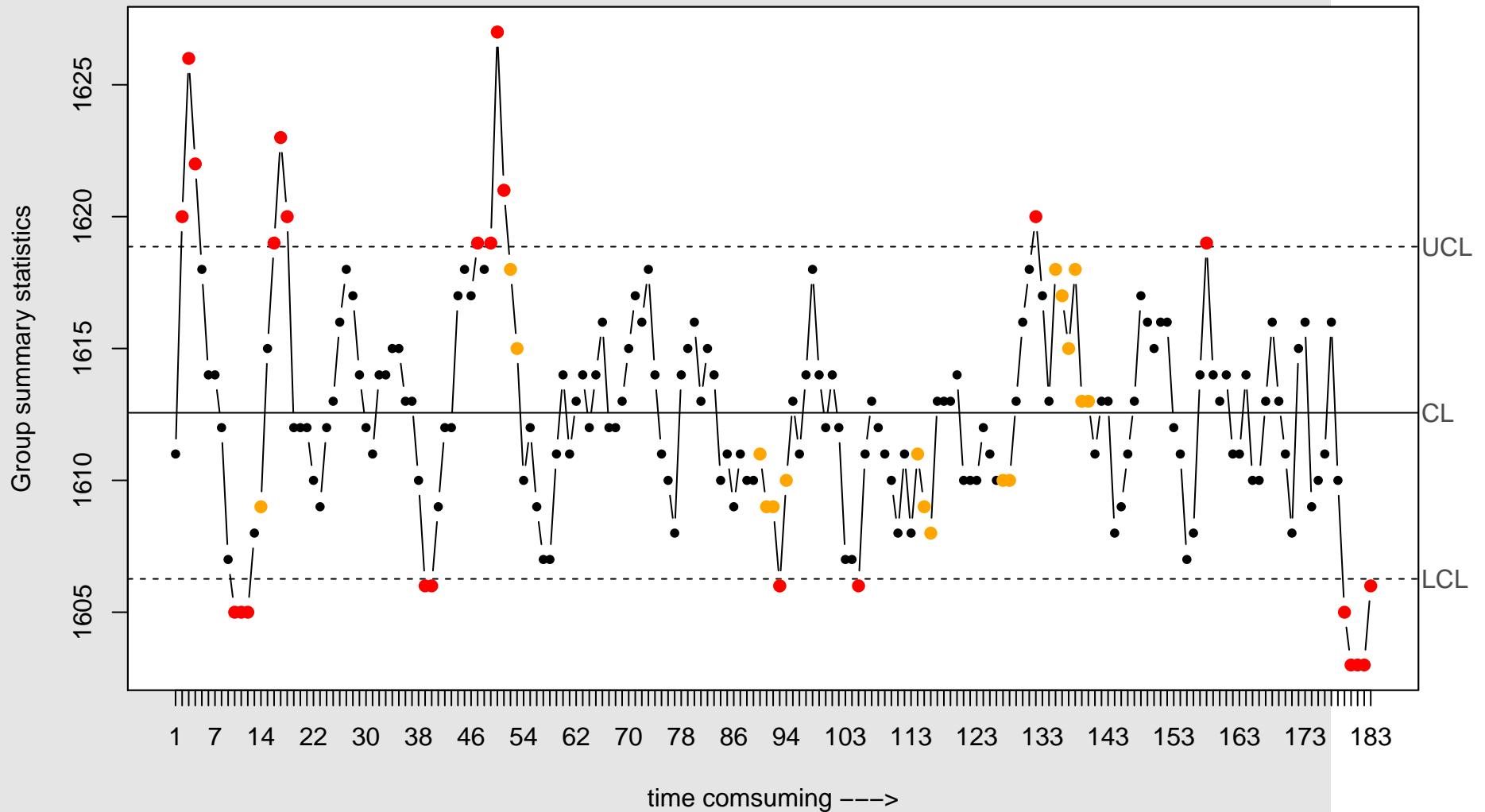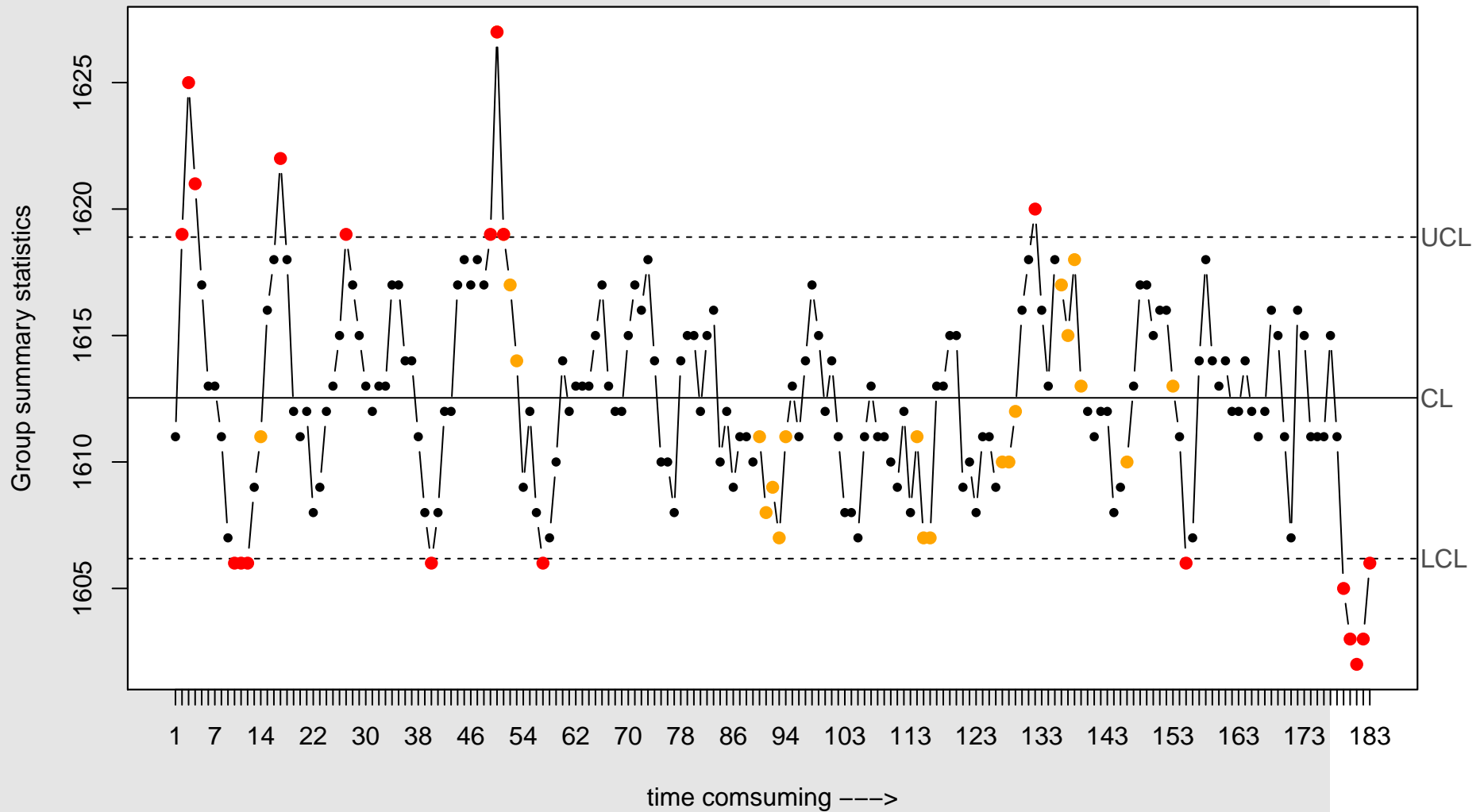time comsuming --->

Number of groups = 183
Center = 1612.536
StdDev = 2.118892

LCL = 1606.179
UCL = 1618.892

Number beyond limits = 20
Number violating runs = 22

114th column point of this product

Group summary statistics

time comsuming ---->
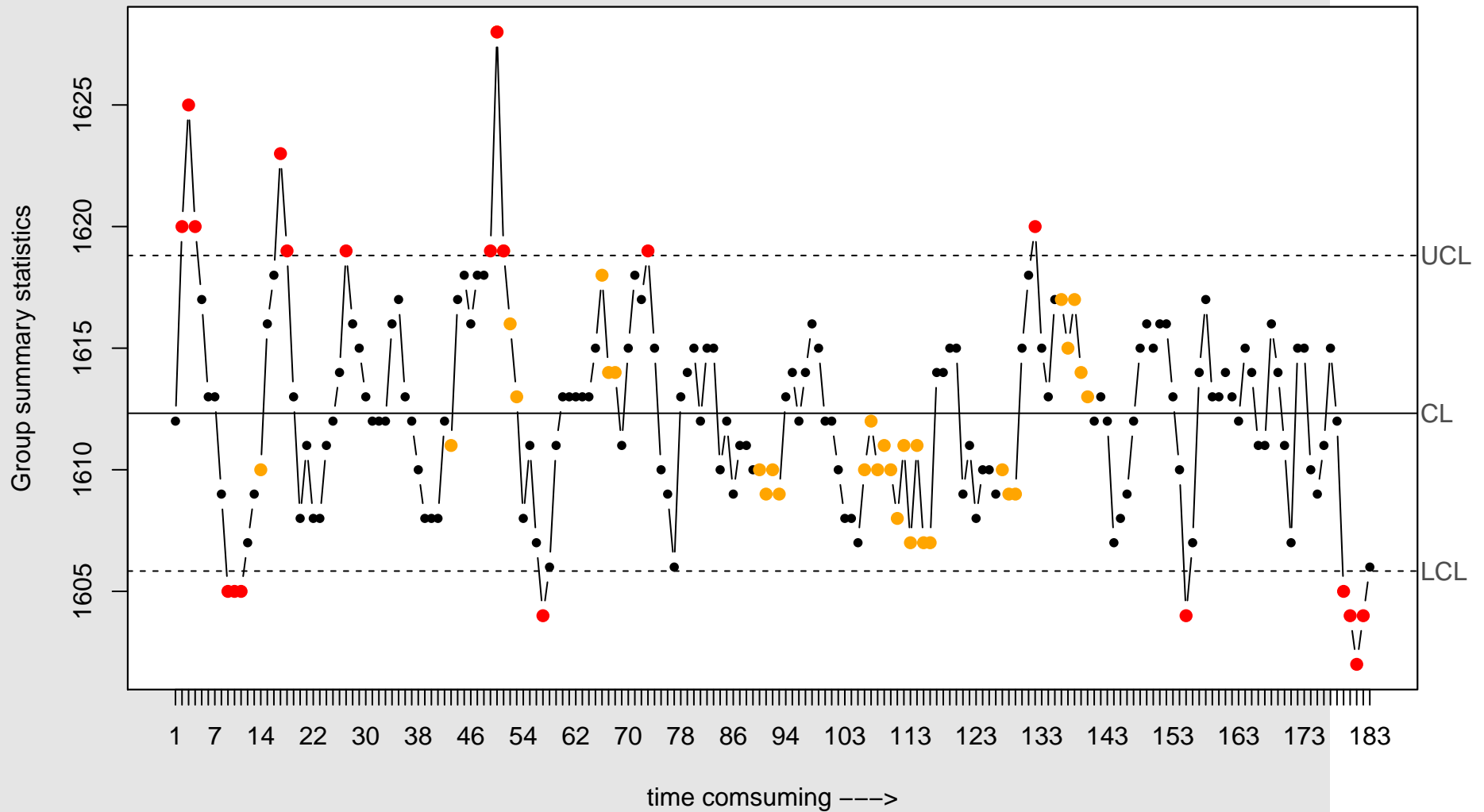
Number of groups = 183
Center = 1612.322
StdDev = 2.162731

LCL = 1605.834
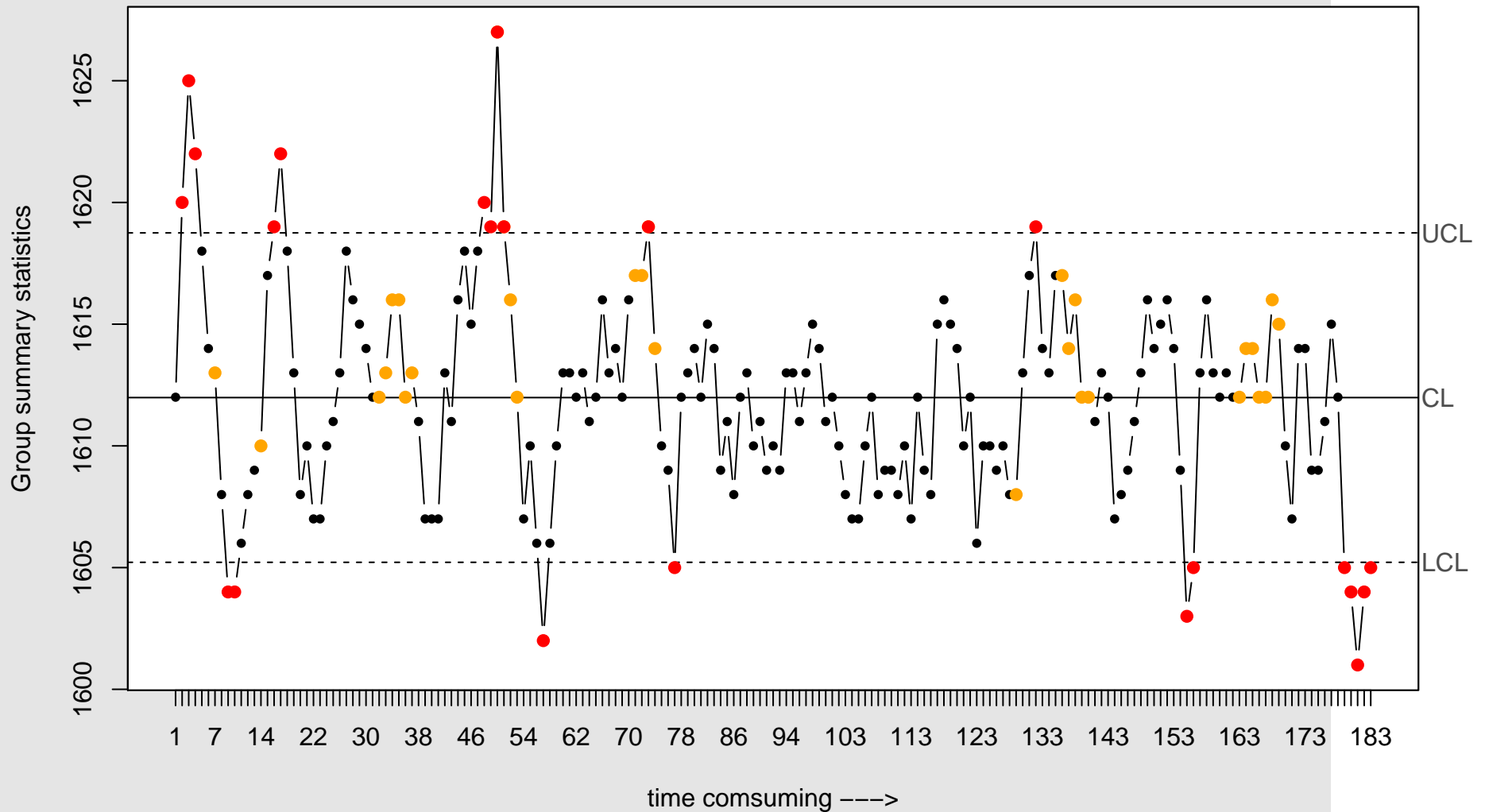UCL = 1618.811

Number beyond limits = 20
Number violating runs = 32

115th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1611.984   LCL = 1605.218   Number beyond limits = 22
StdDev = 2.25528   UCL = 1618.749   Number violating runs = 29

116th column point of this product

Group summary statistics

time comsuming ---->
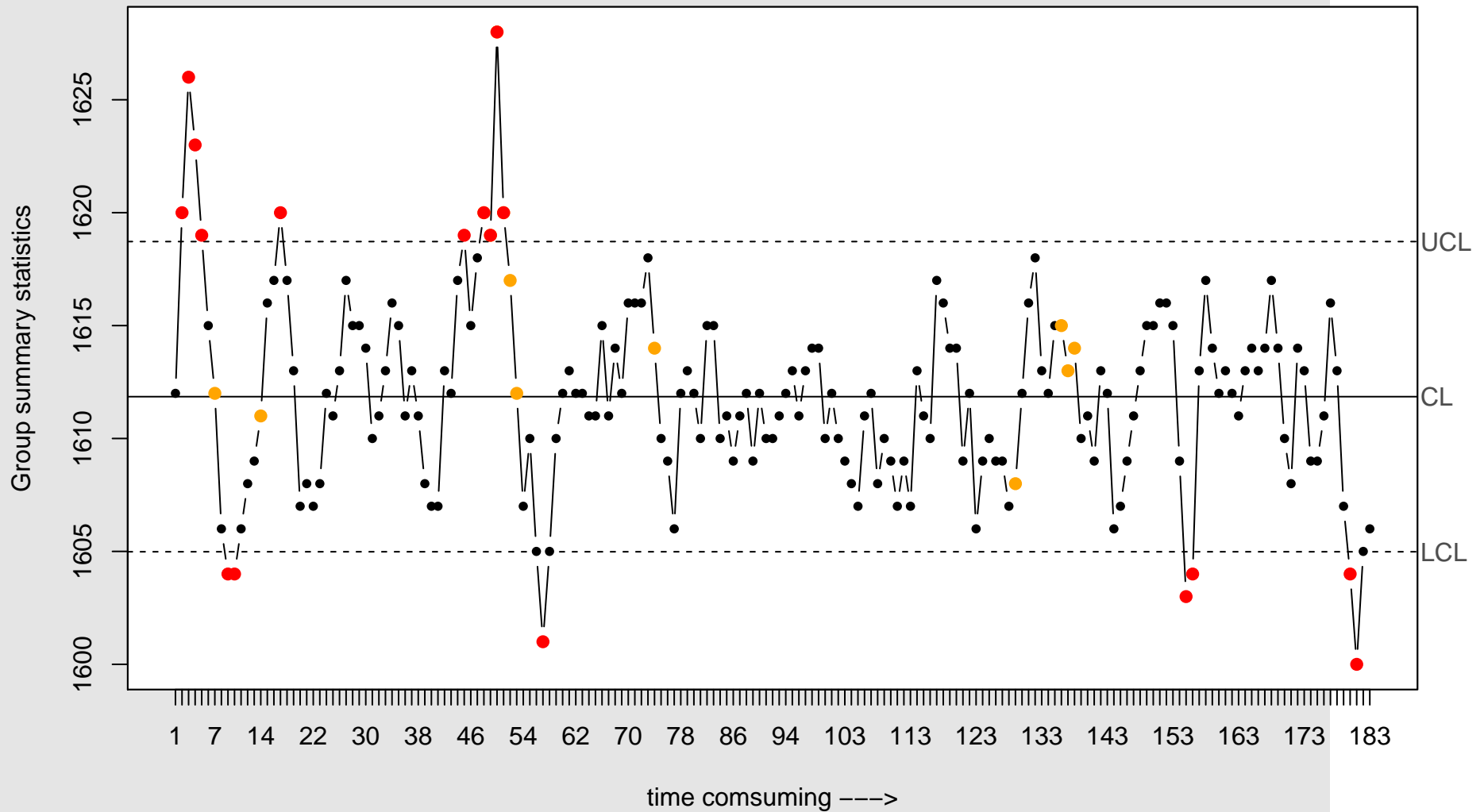
Number of groups = 183
Center = 1611.852   LCL = 1604.984   Number beyond limits = 17
StdDev = 2.289377   UCL = 1618.721   Number violating runs = 13

117th column point of this product

Group summary statistics

time comsuming ---->
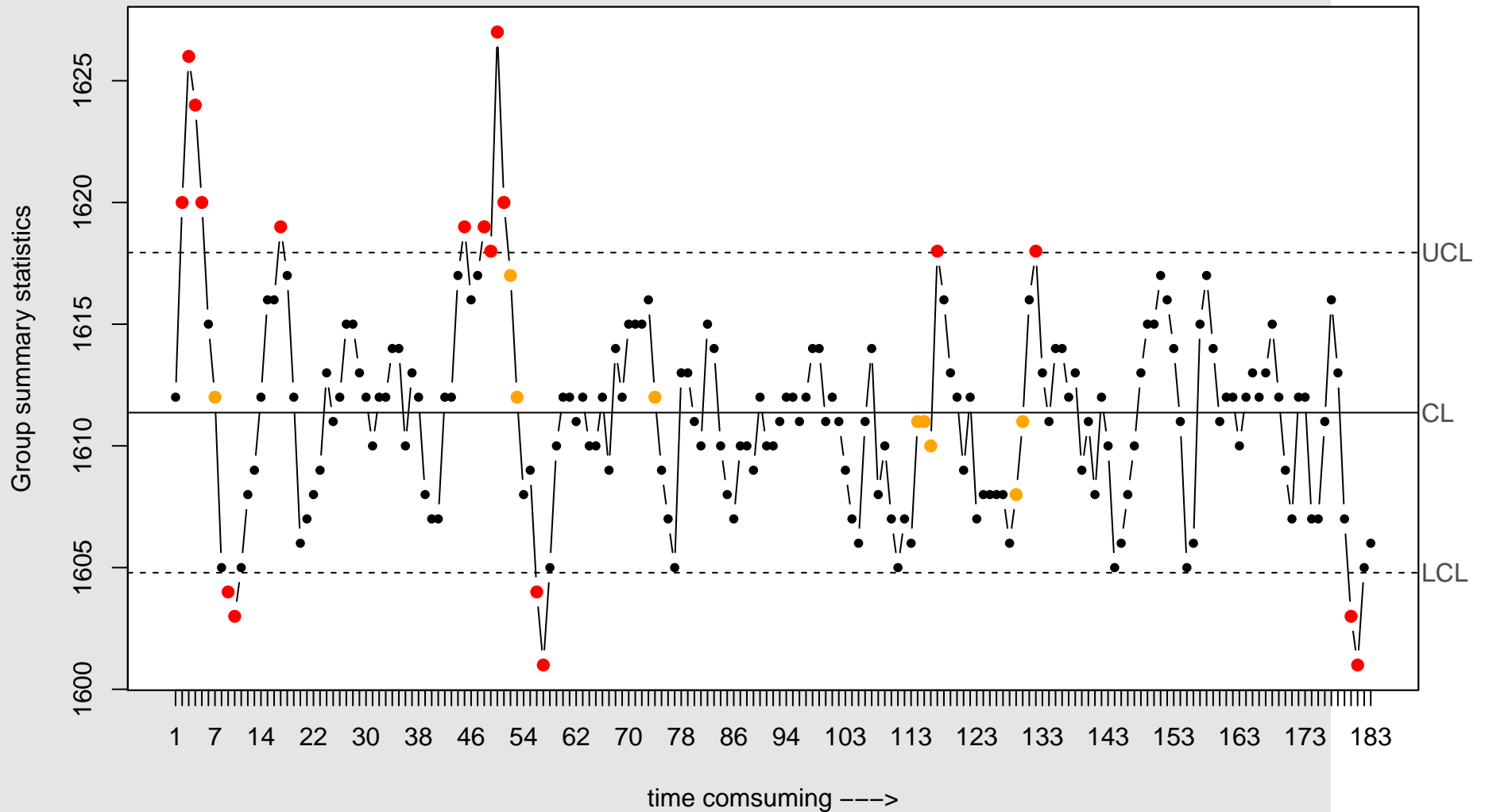
Number of groups = 183
Center = 1611.366   LCL = 1604.79   Number beyond limits = 18
StdDev = 2.191957   UCL = 1617.942   Number violating runs = 13

118th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ———>

Number of groups = 183
Center = 1610.902   LCL = 1604.472   Number beyond limits = 18
StdDev = 2.143247   UCL = 1617.331   Number violating runs = 12

119th column point of this product

Group summary statistics

UCL

CL

LCL

time comsuming ---->
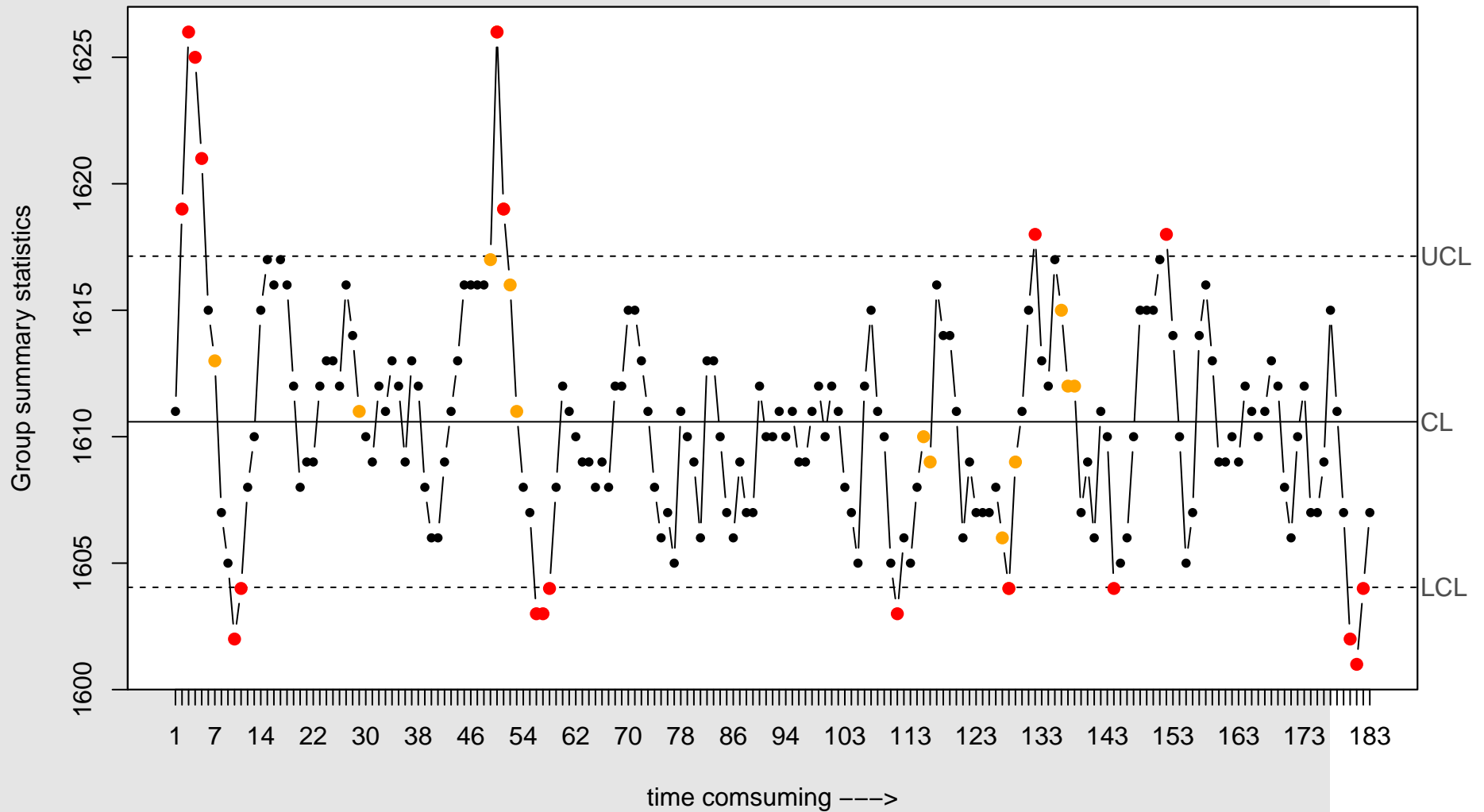
Number of groups = 183
Center = 1610.59
StdDev = 2.182215

LCL = 1604.044
UCL = 1617.137

Number beyond limits = 19
Number violating runs = 15

120th column point of this product

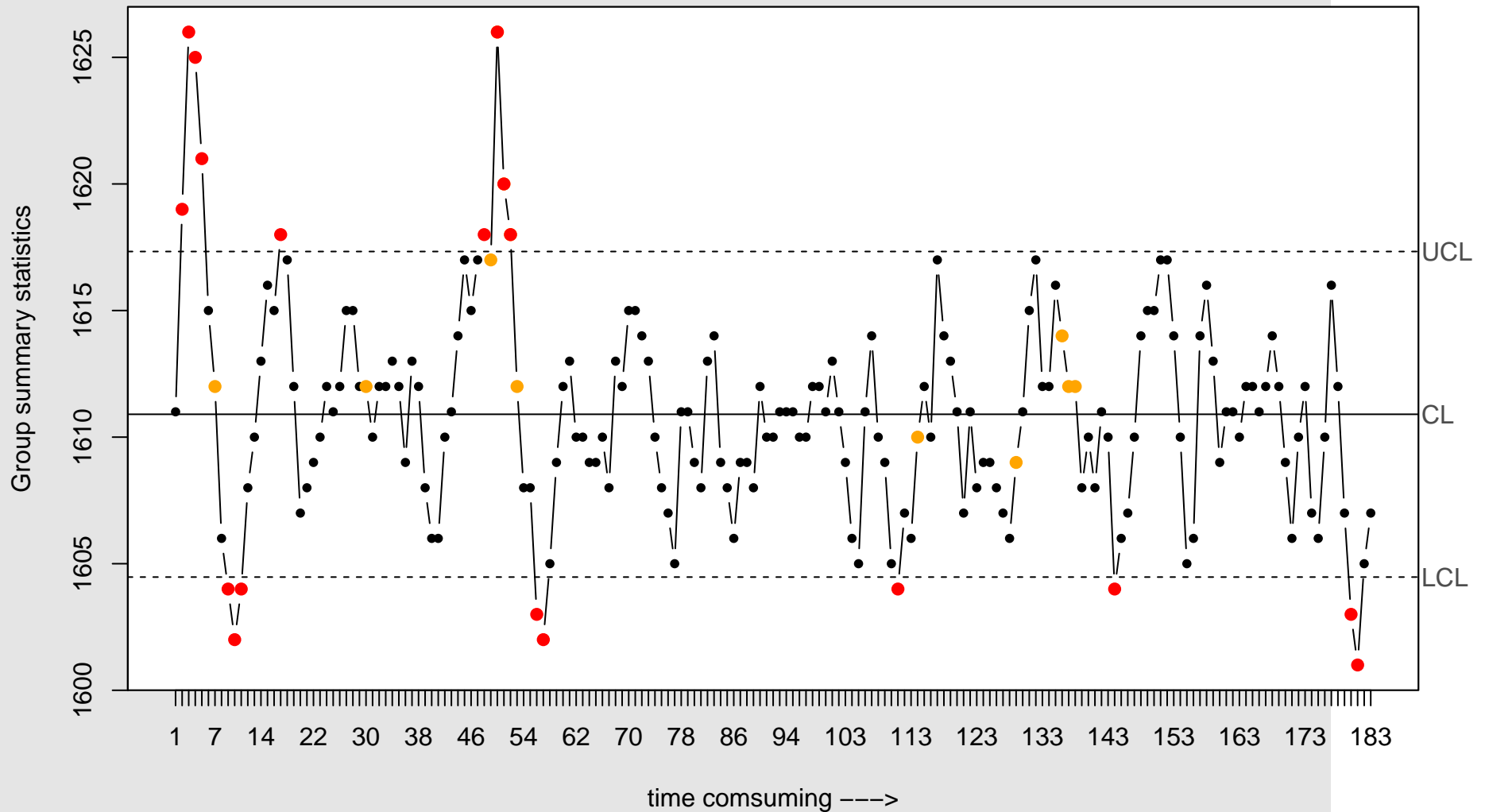time comsuming --->
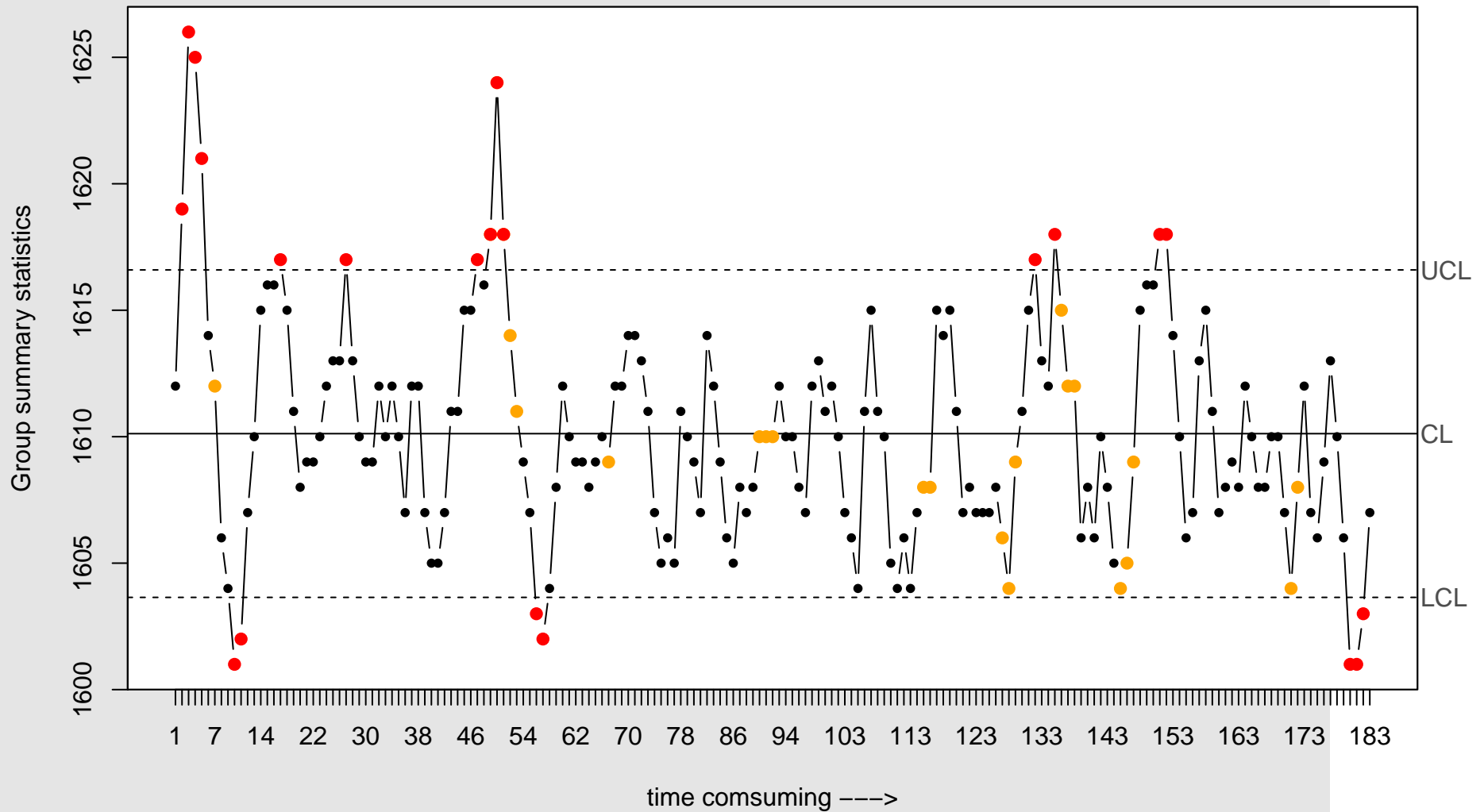
Number of groups = 183
Center = 1610.12
StdDev = 2.15786

LCL = 1603.647
UCL = 1616.594

Number beyond limits = 21
Number violating runs = 23

121th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1609.601   LCL = 1603.186   Number beyond limits = 21
StdDev = 2.138376   UCL = 1616.016   Number violating runs = 21

122th column point of this product

Group summary statistics

time comsuming ———>
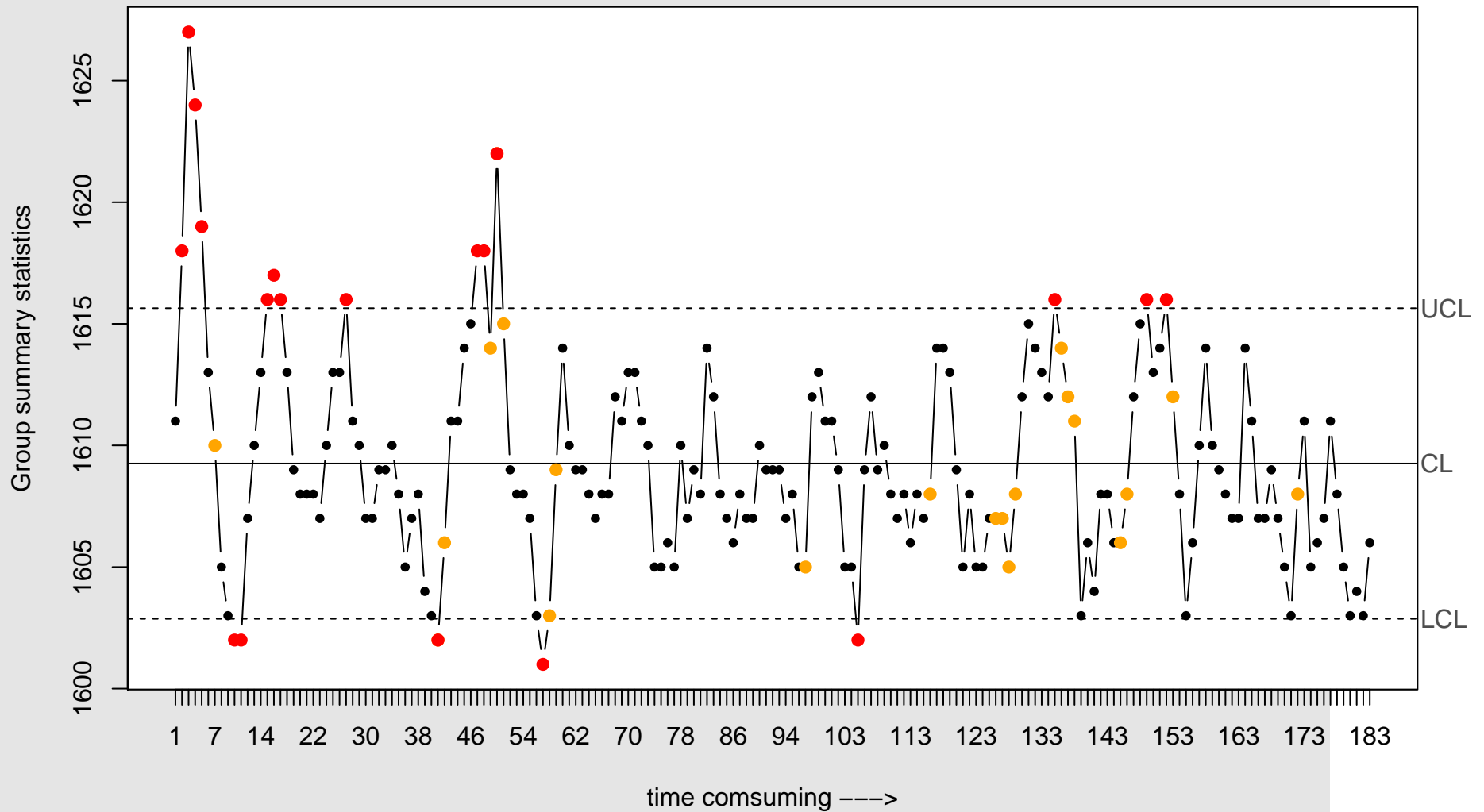
Number of groups = 183
Center = 1609.257
StdDev = 2.128634

LCL = 1602.871
UCL = 1615.643

Number beyond limits = 19
Number violating runs = 21

123th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1608.874
StdDev = 2.133505
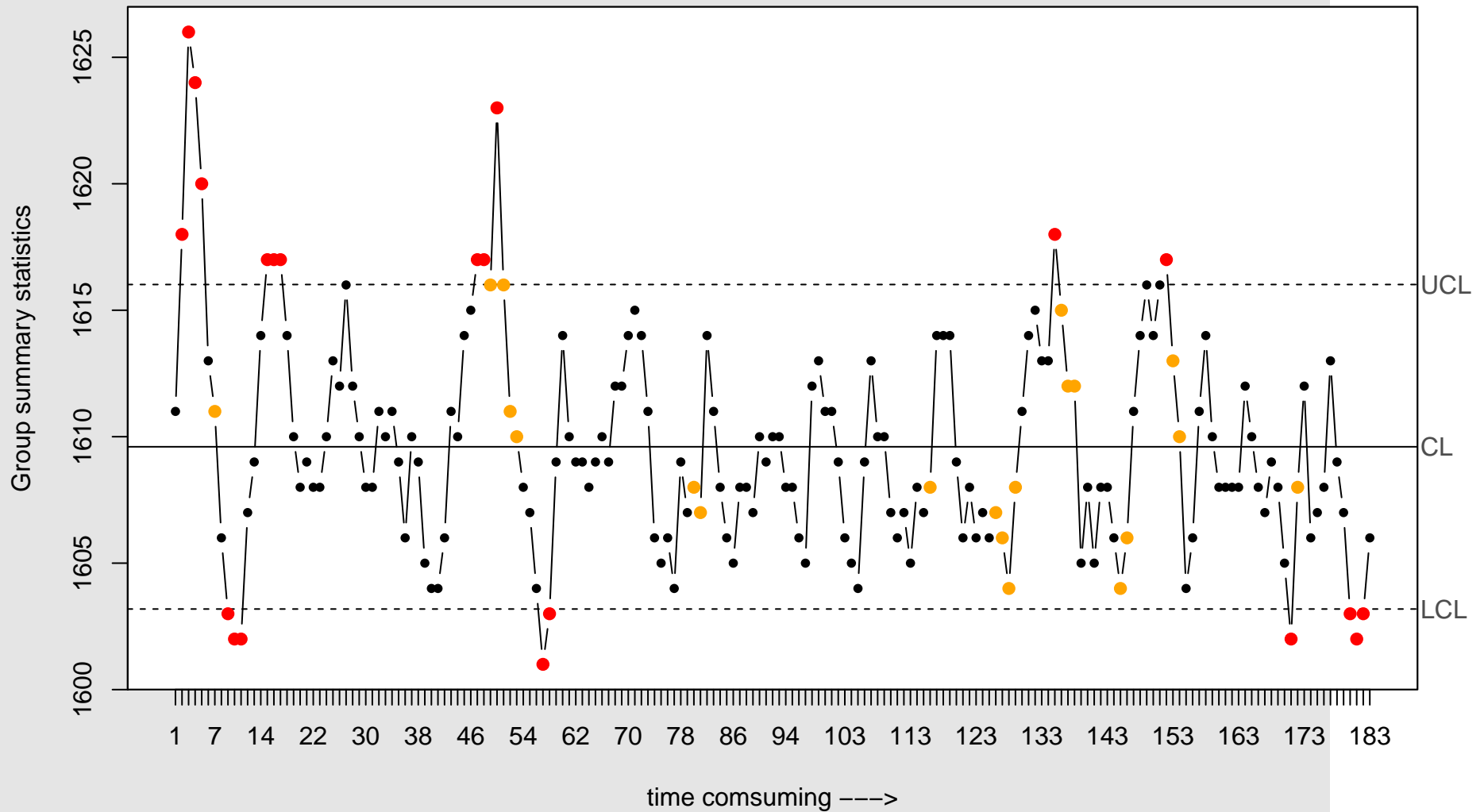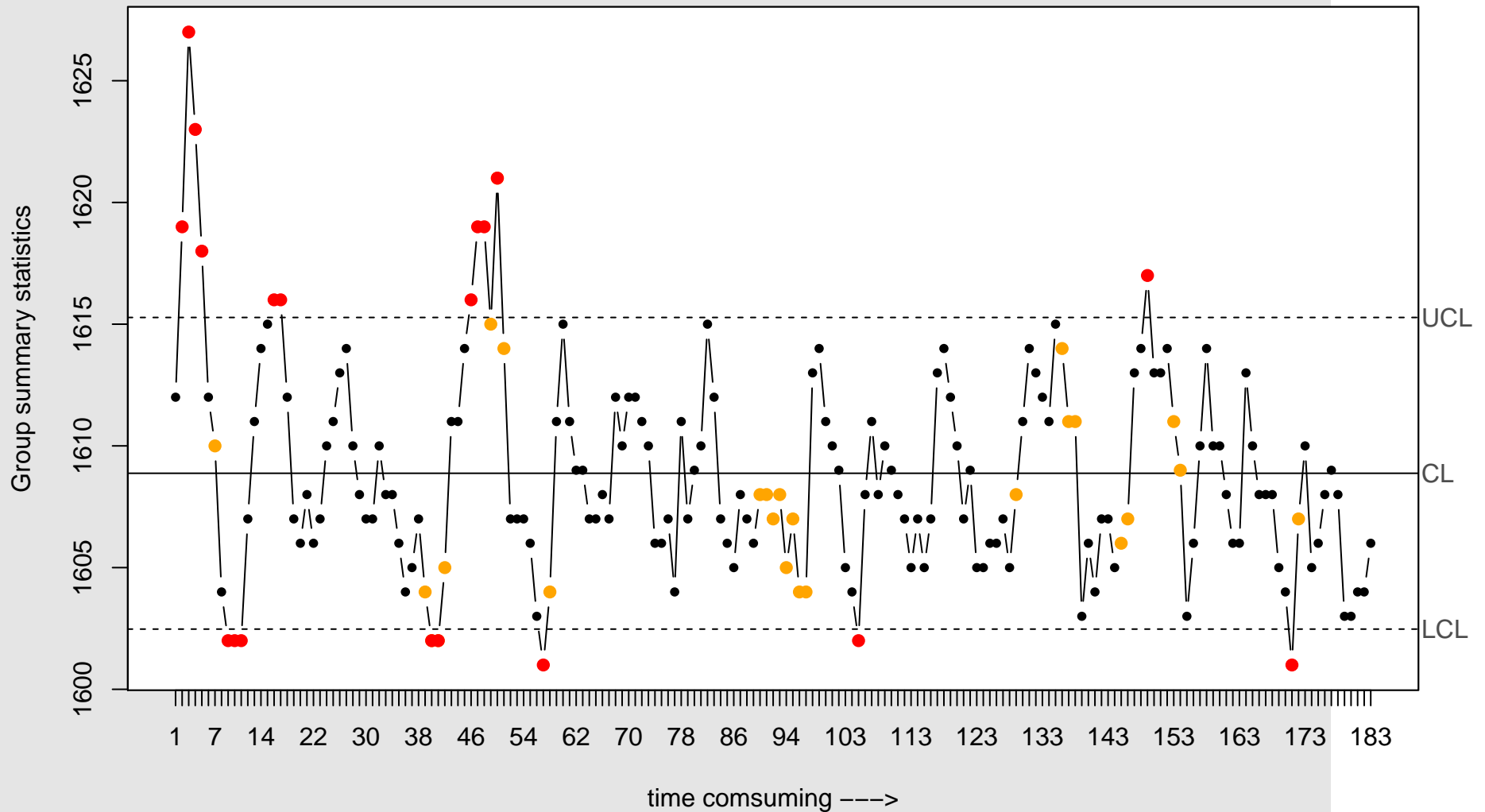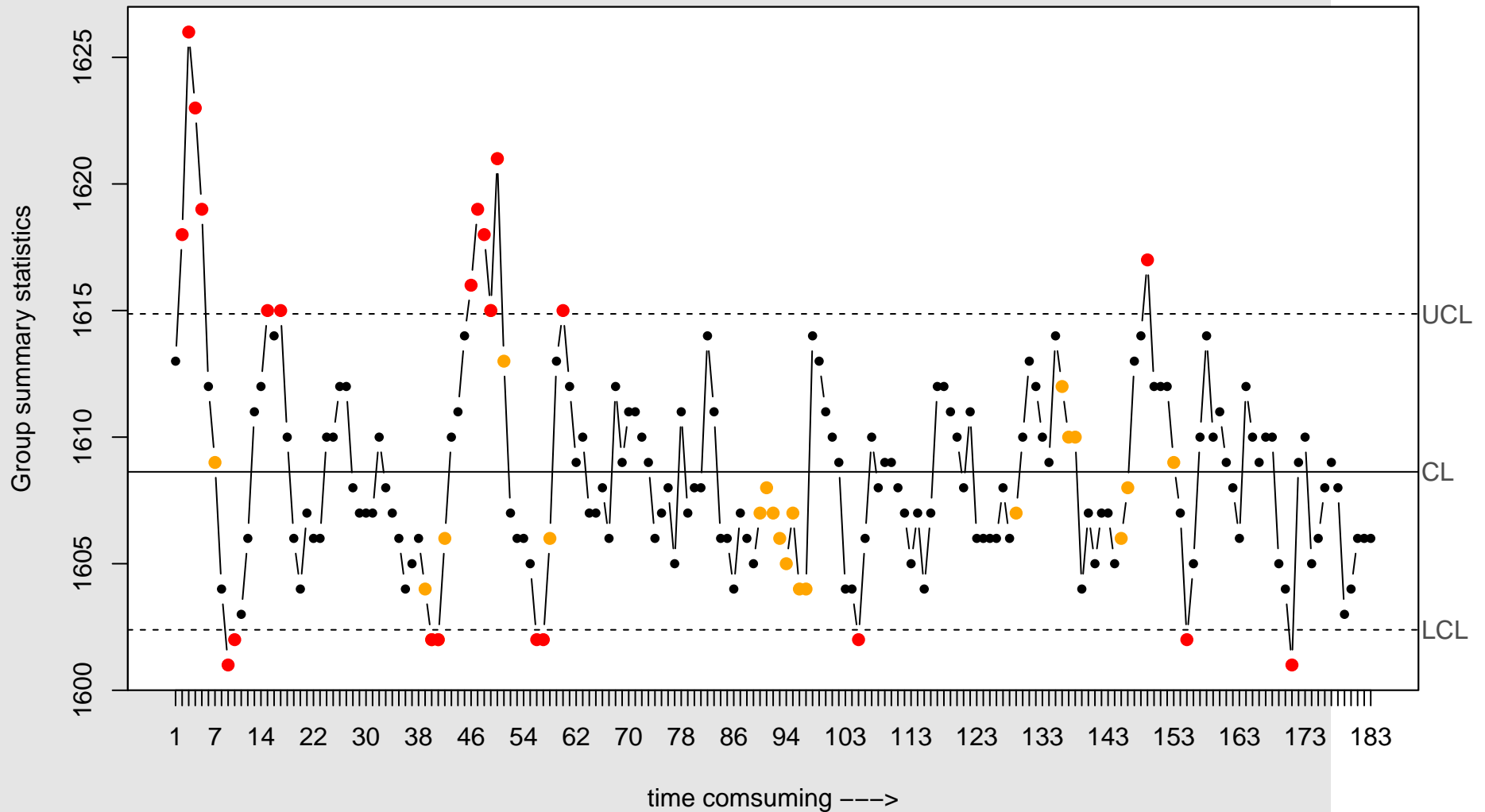
LCL = 1602.474
UCL = 1615.275

Number beyond limits = 19
Number violating runs = 26

124th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
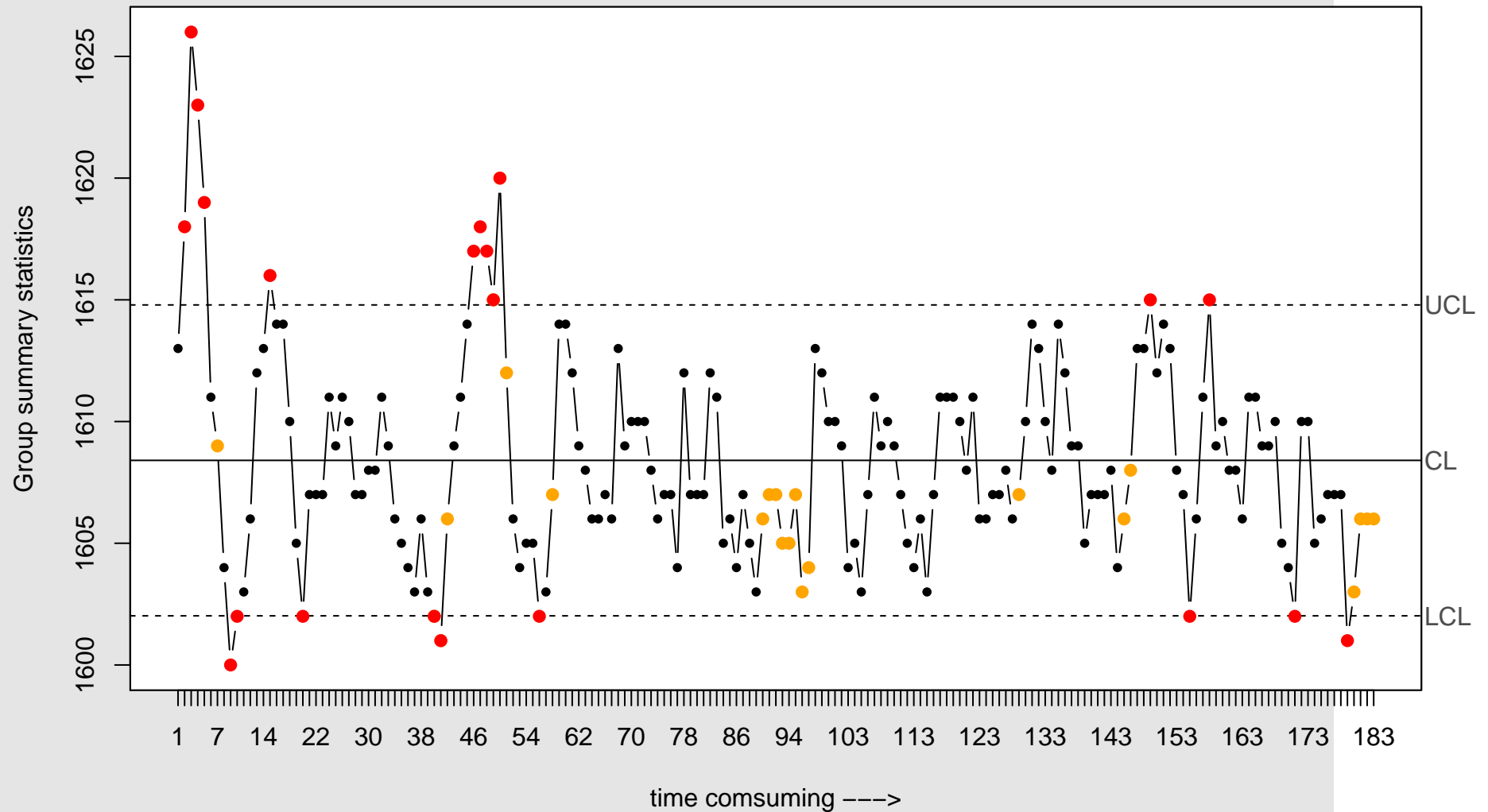Center = 1608.628
StdDev = 2.079924

LCL = 1602.389
UCL = 1614.868

Number beyond limits = 22
Number violating runs = 24

125th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1608.404   LCL = 1602.018   Number beyond limits = 21
StdDev = 2.128634   UCL = 1614.79   Number violating runs = 23

126th column point of this product

Group summary statistics

time comsuming ——–>
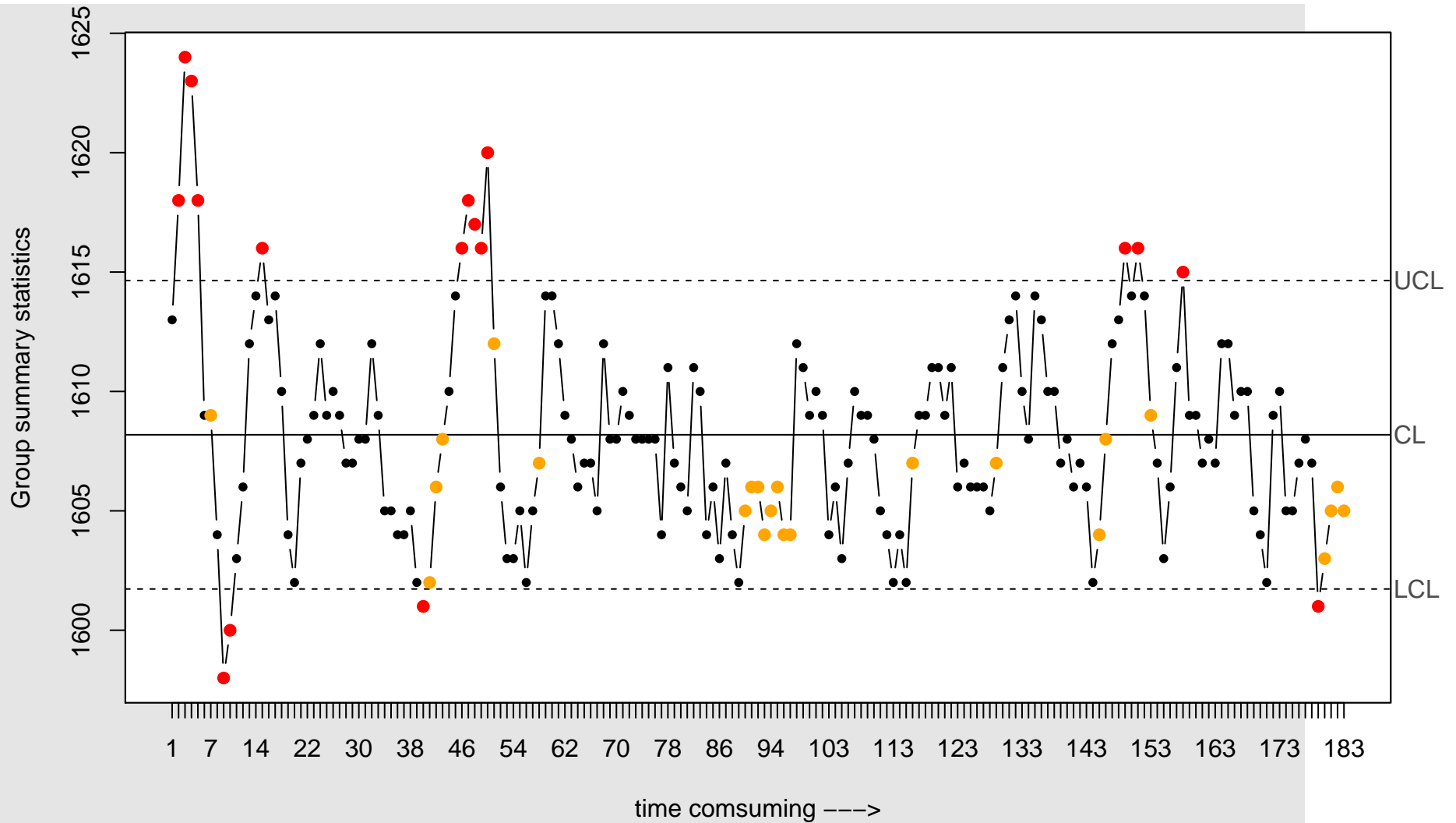
Number of groups = 183
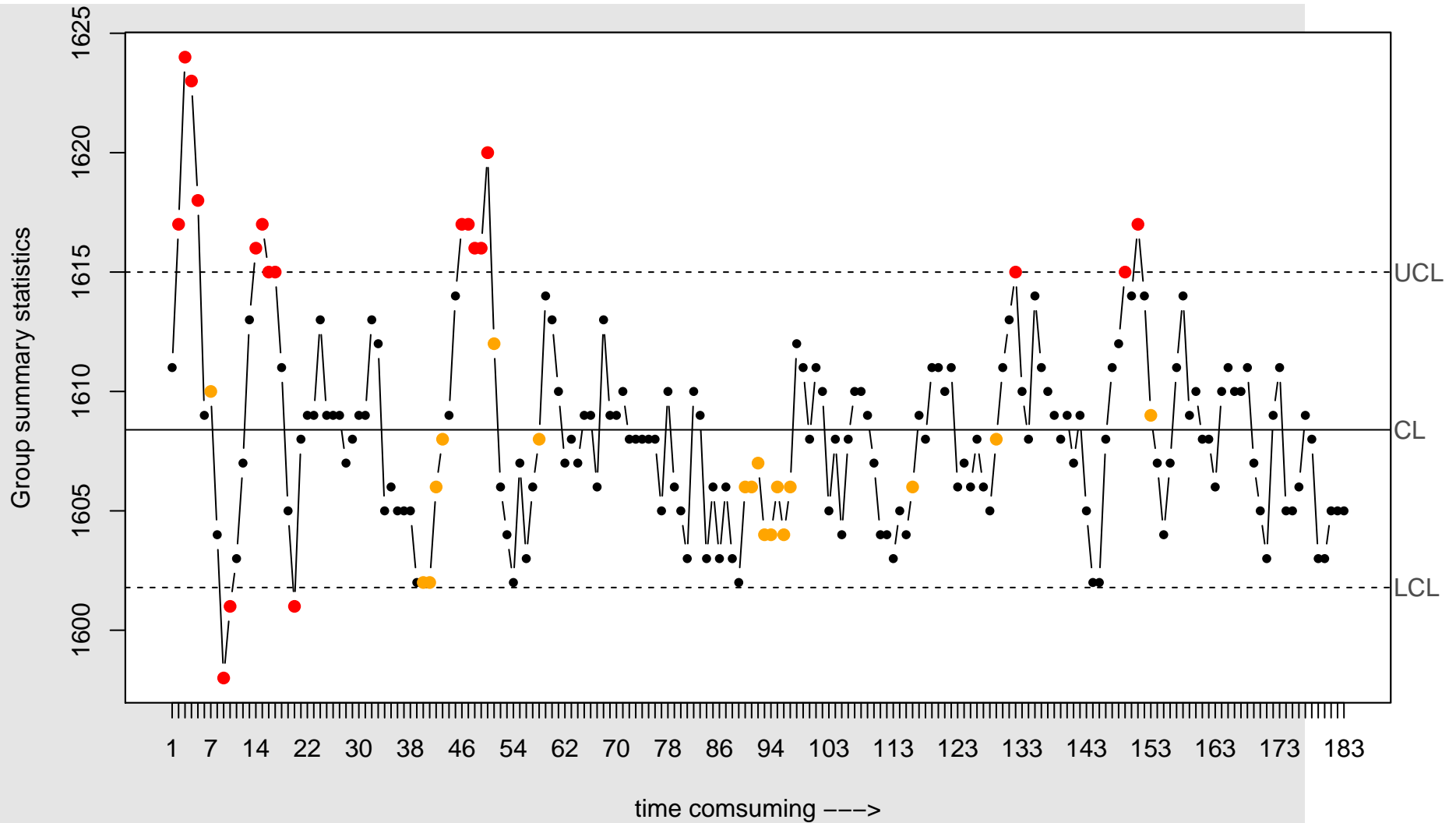Center = 1608.186
StdDev = 2.152989

LCL = 1601.727
UCL = 1614.645

Number beyond limits = 17
Number violating runs = 25

127th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1608.393   LCL = 1601.788   Number beyond limits = 19
StdDev = 2.201699   UCL = 1614.999   Number violating runs = 19

128th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1608.459   LCL = 1601.81   Number beyond limits = 12
StdDev = 2.216312   UCL = 1615.108   Number violating runs = 27

129th column point of this product

Group summary statistics

time comsuming ---->
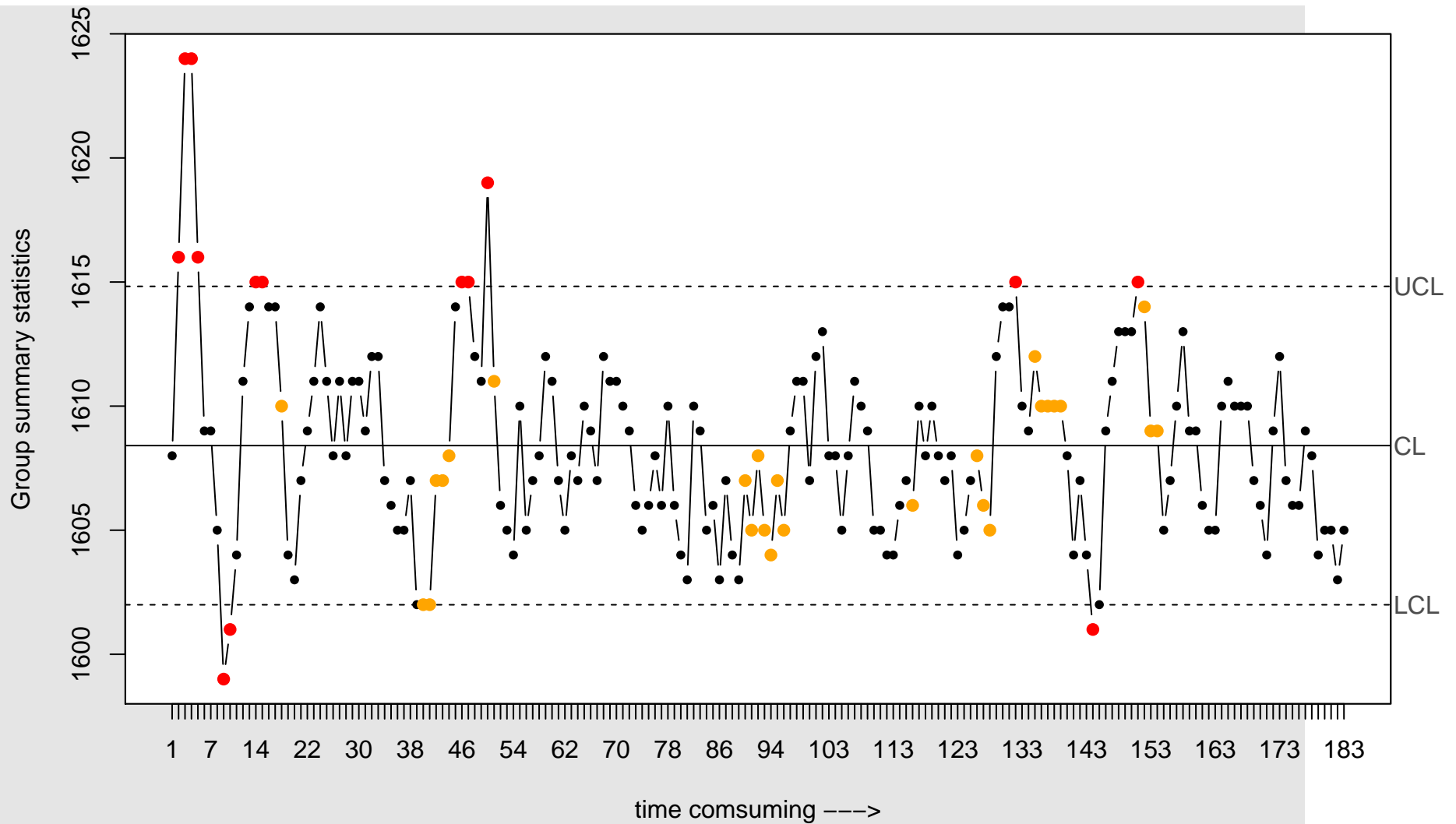
Number of groups = 183
Center = 1608.41
StdDev = 2.138376

LCL = 1601.995
UCL = 1614.825

Number beyond limits = 14
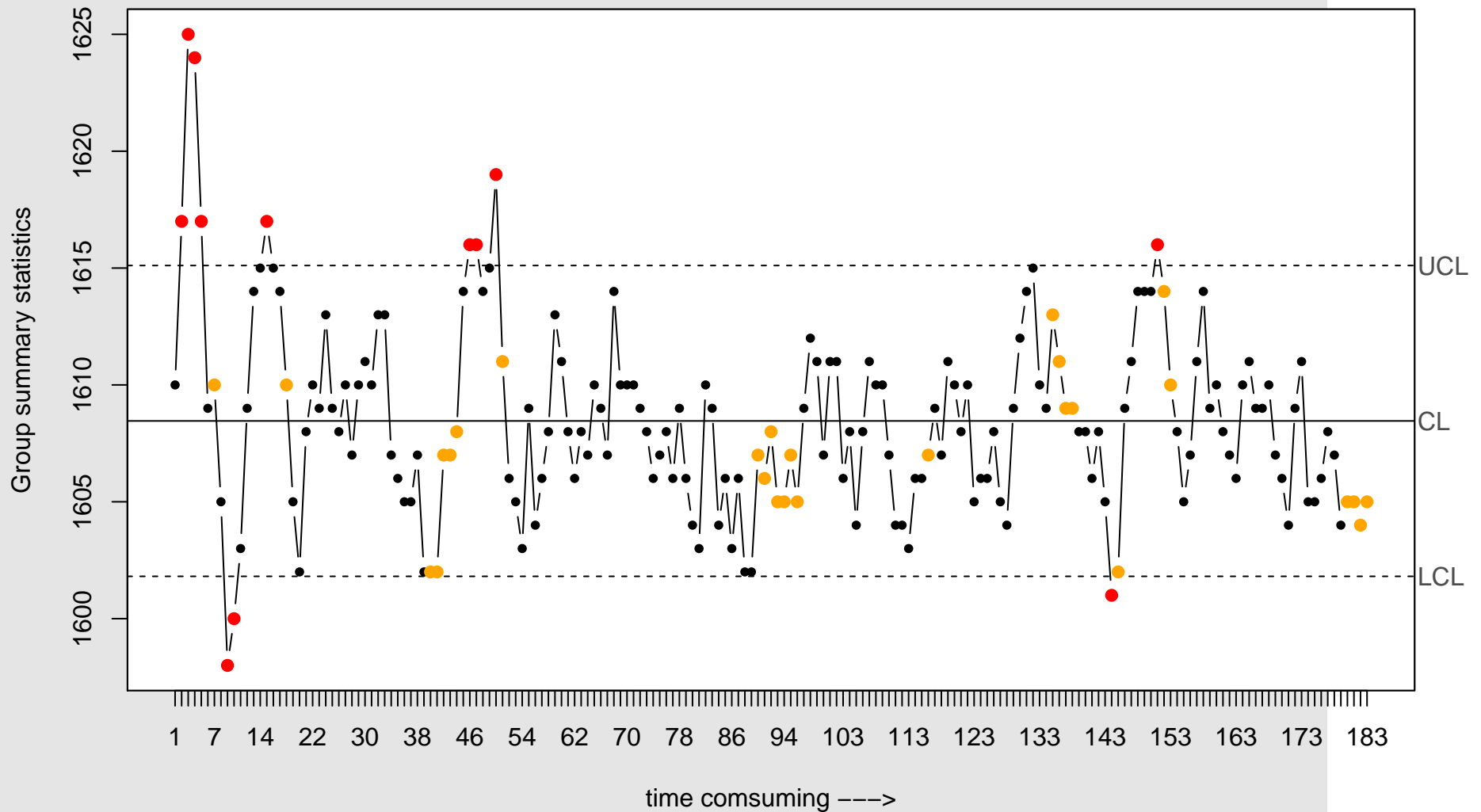Number violating runs = 26

130th column point of this product

Group summary statistics

time comsuming –––>
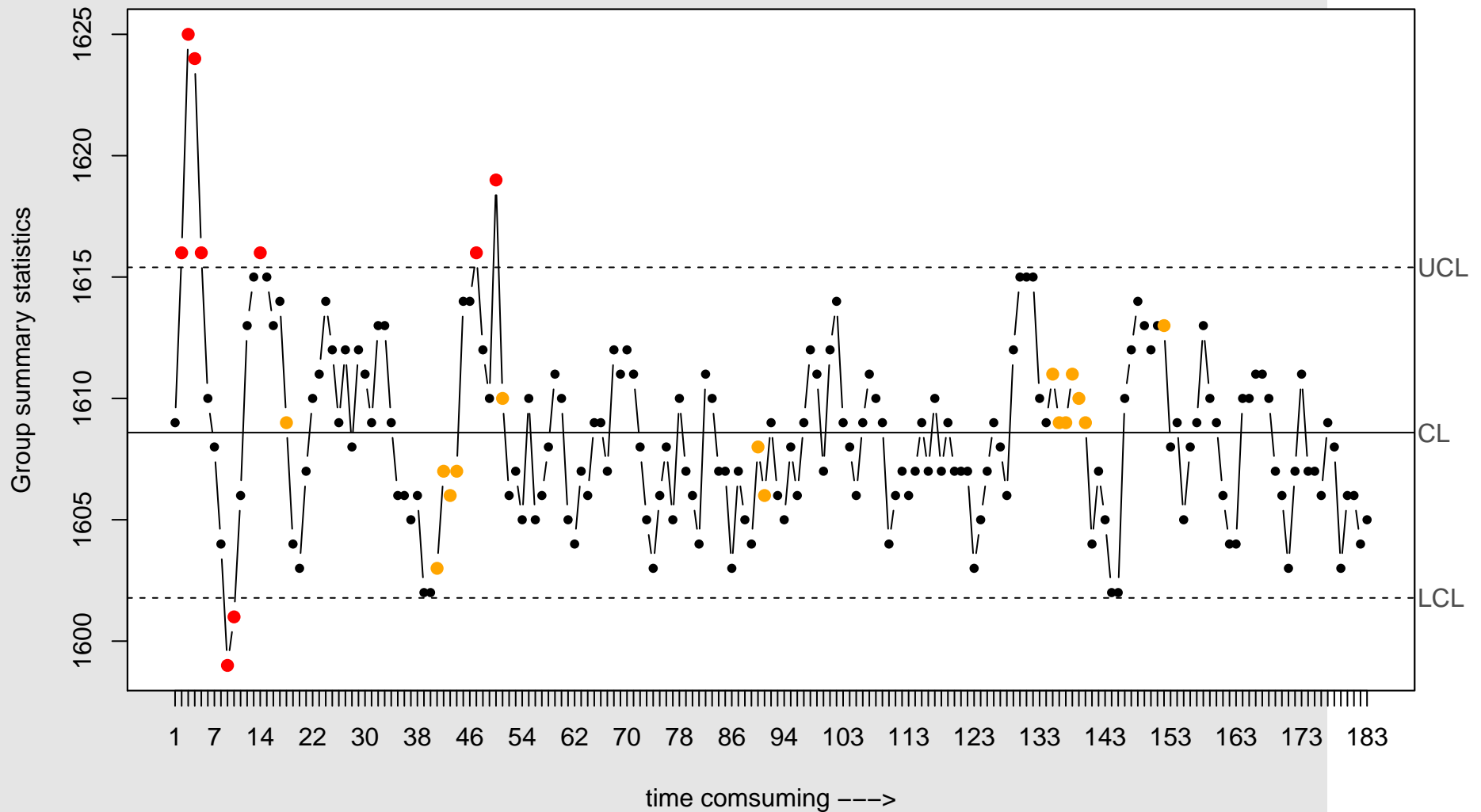
Number of groups = 183
Center = 1608.59   LCL = 1601.78   Number beyond limits = 9
StdDev = 2.269893   UCL = 1615.4   Number violating runs = 15

131th column point of this product

Group summary statistics

time comsuming ---->
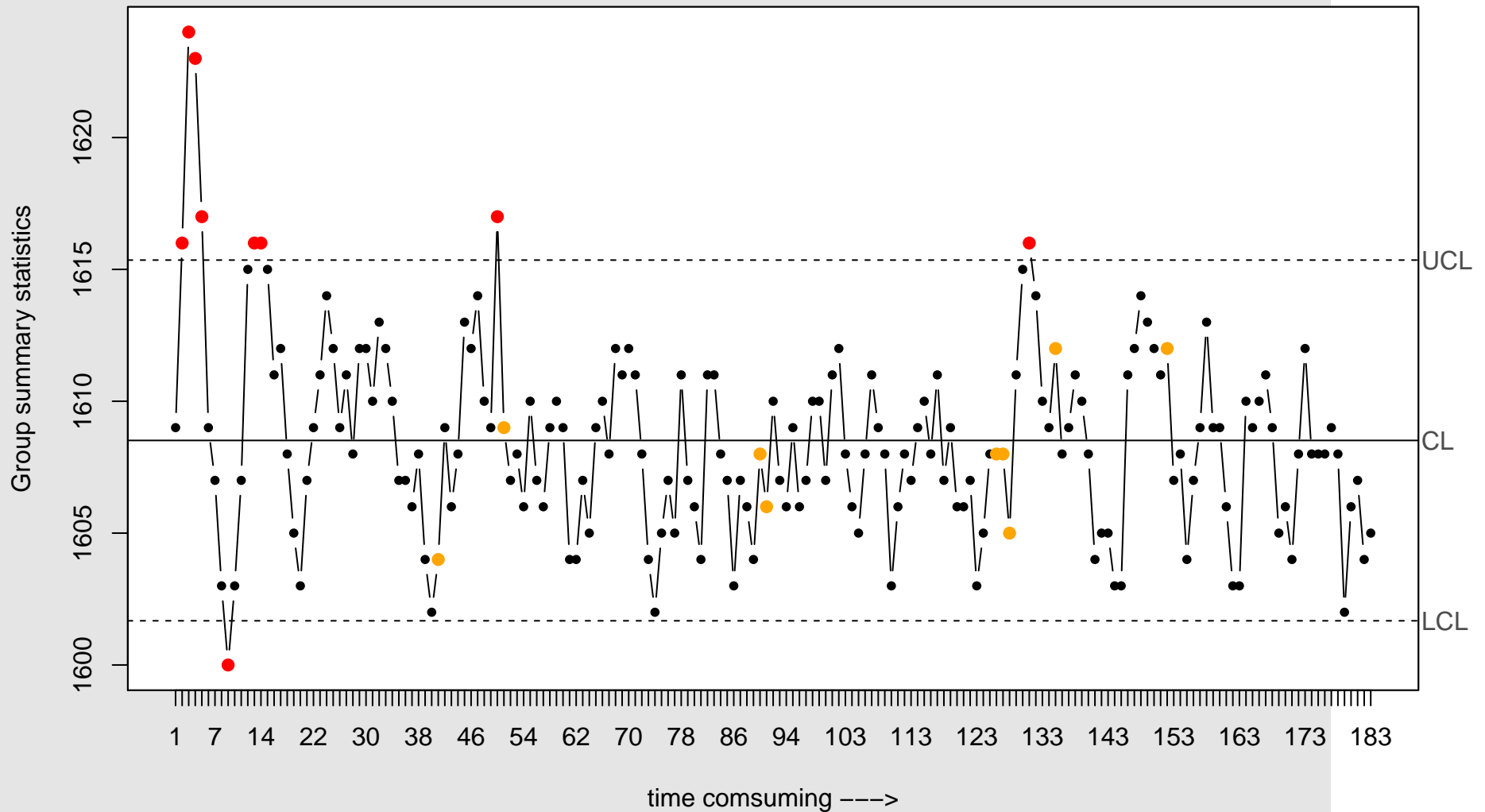
Number of groups = 183
Center = 1608.514   LCL = 1601.675   Number beyond limits = 9
StdDev = 2.279635   UCL = 1615.353   Number violating runs = 9

132th column point of this product

Group summary statistics

time comsuming ---->
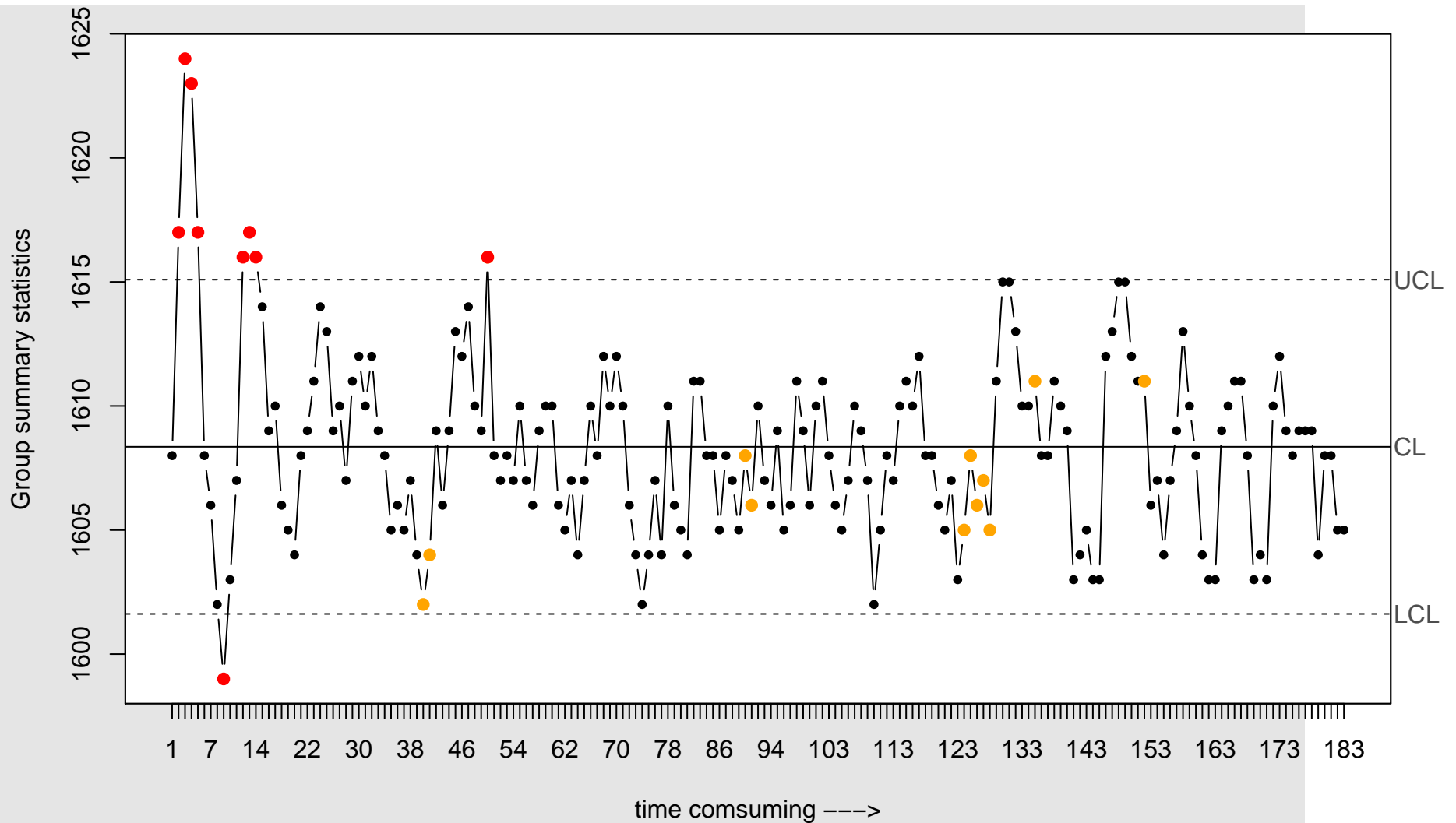
Number of groups = 183
Center = 1608.355   LCL = 1601.619   Number beyond limits = 9
StdDev = 2.245538   UCL = 1615.092   Number violating runs = 12

133th column point of this product

Group summary statistics

time comsuming ---->
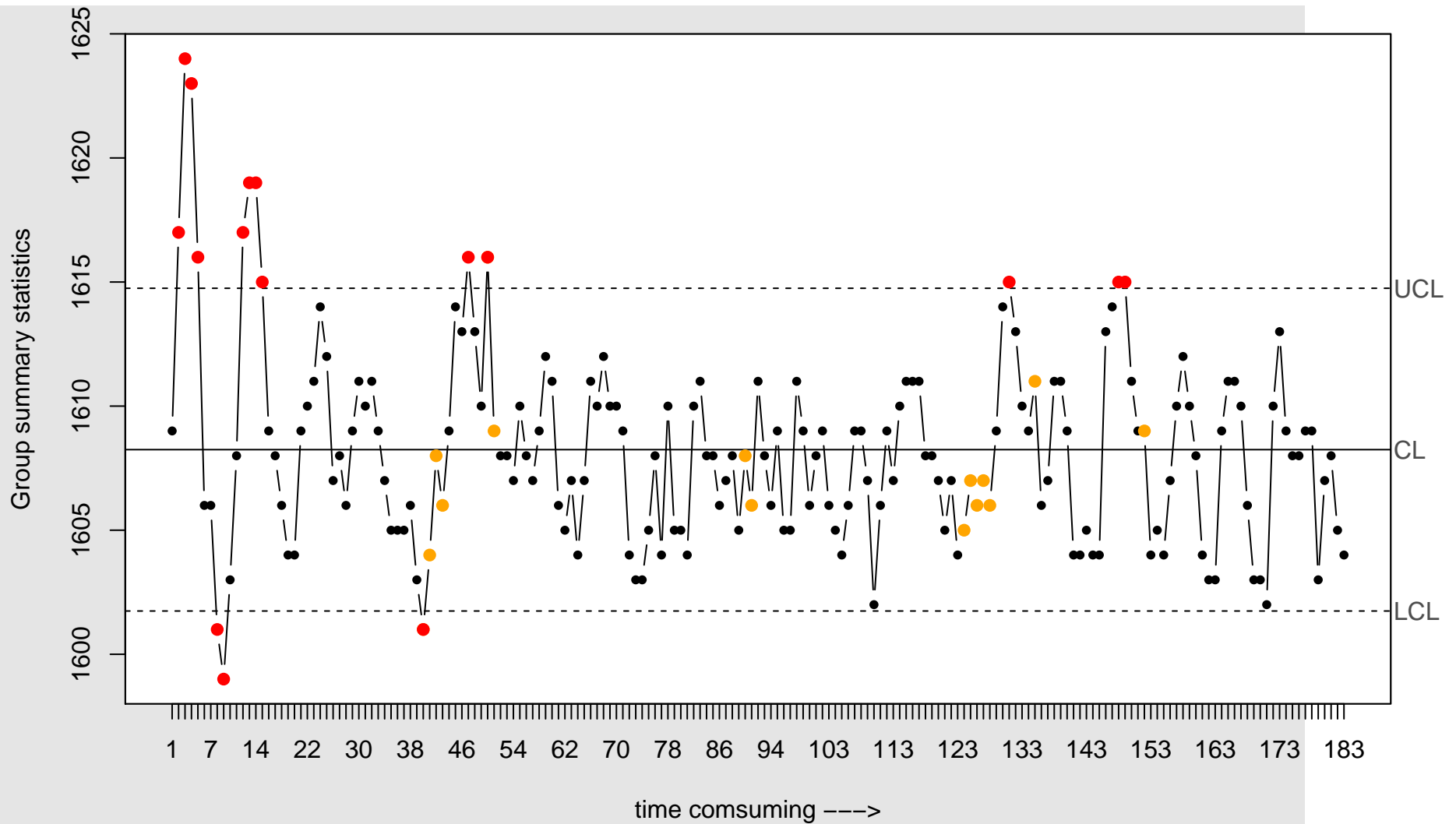
Number of groups = 183
Center = 1608.246
StdDev = 2.167602

LCL = 1601.743
UCL = 1614.749

Number beyond limits = 16
Number violating runs = 15

134th column point of this product

time comsuming –––>
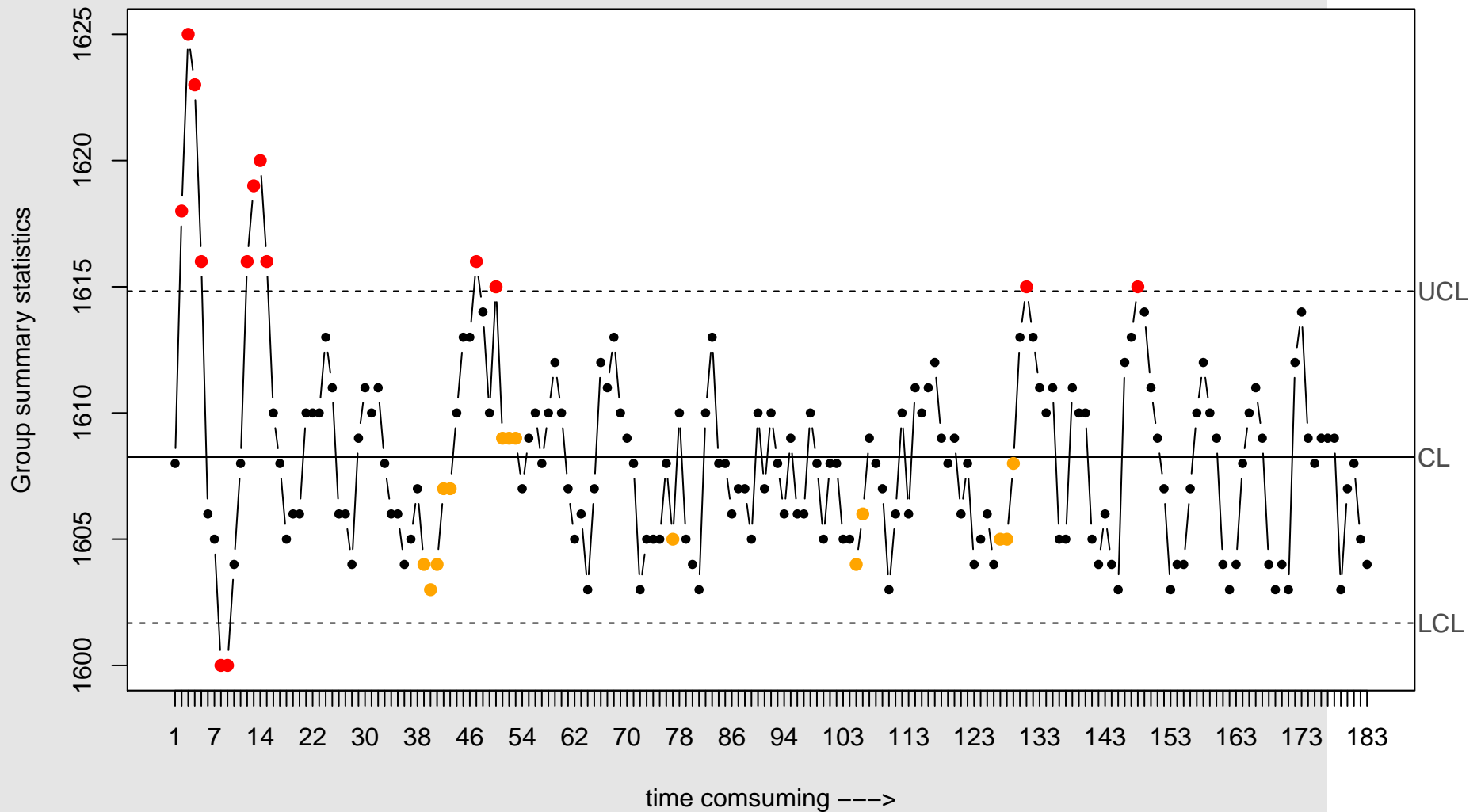
Number of groups = 183
Center = 1608.251   LCL = 1601.675   Number beyond limits = 14
StdDev = 2.191957   UCL = 1614.827   Number violating runs = 15

135th column point of this product

Group summary statistics

time comsuming --->
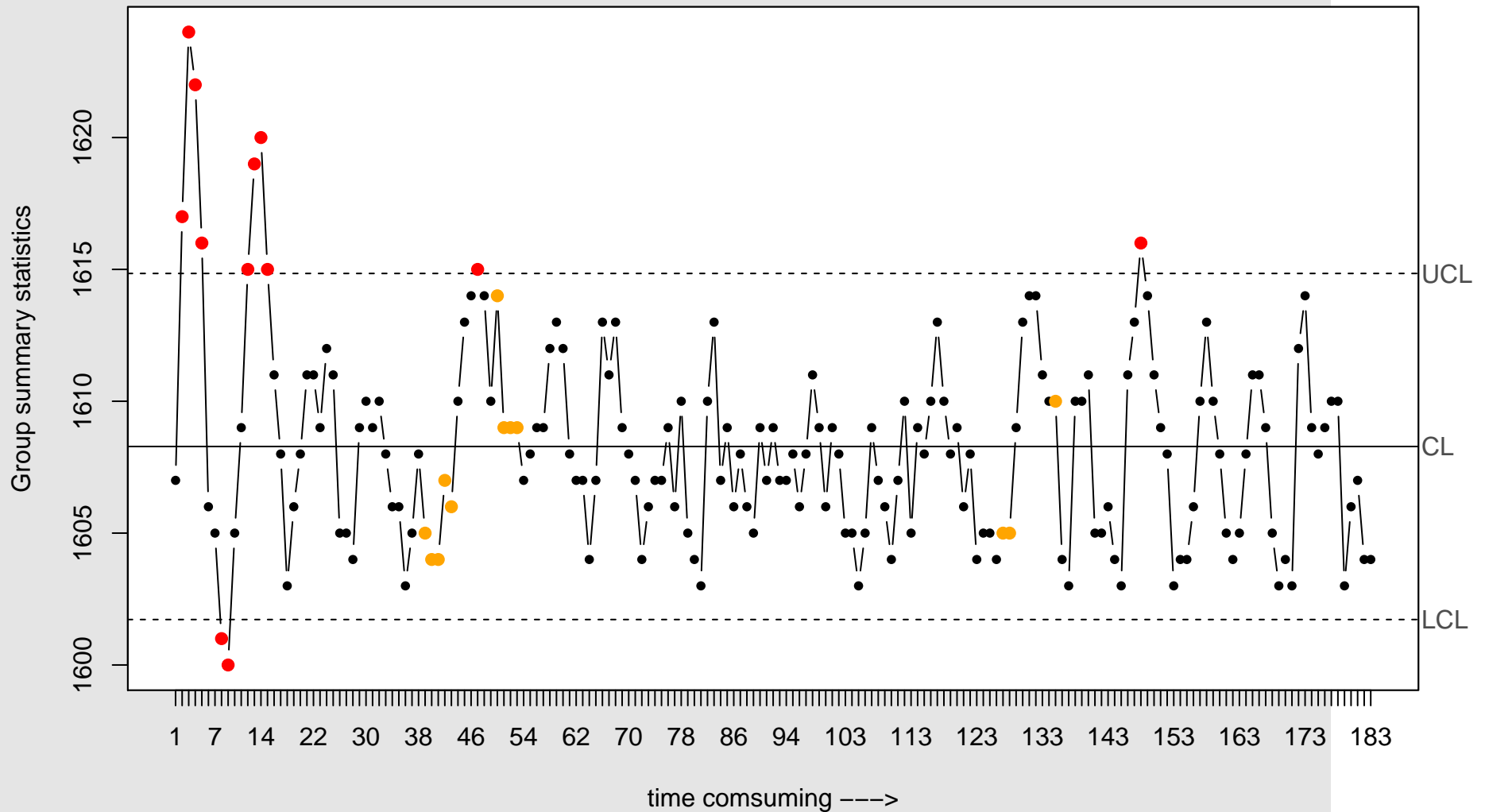
Number of groups = 183
Center = 1608.284
StdDev = 2.187086

LCL = 1601.723
UCL = 1614.845

Number beyond limits = 12
Number violating runs = 12

136th column point of this product

Group summary statistics

time comsuming ---->
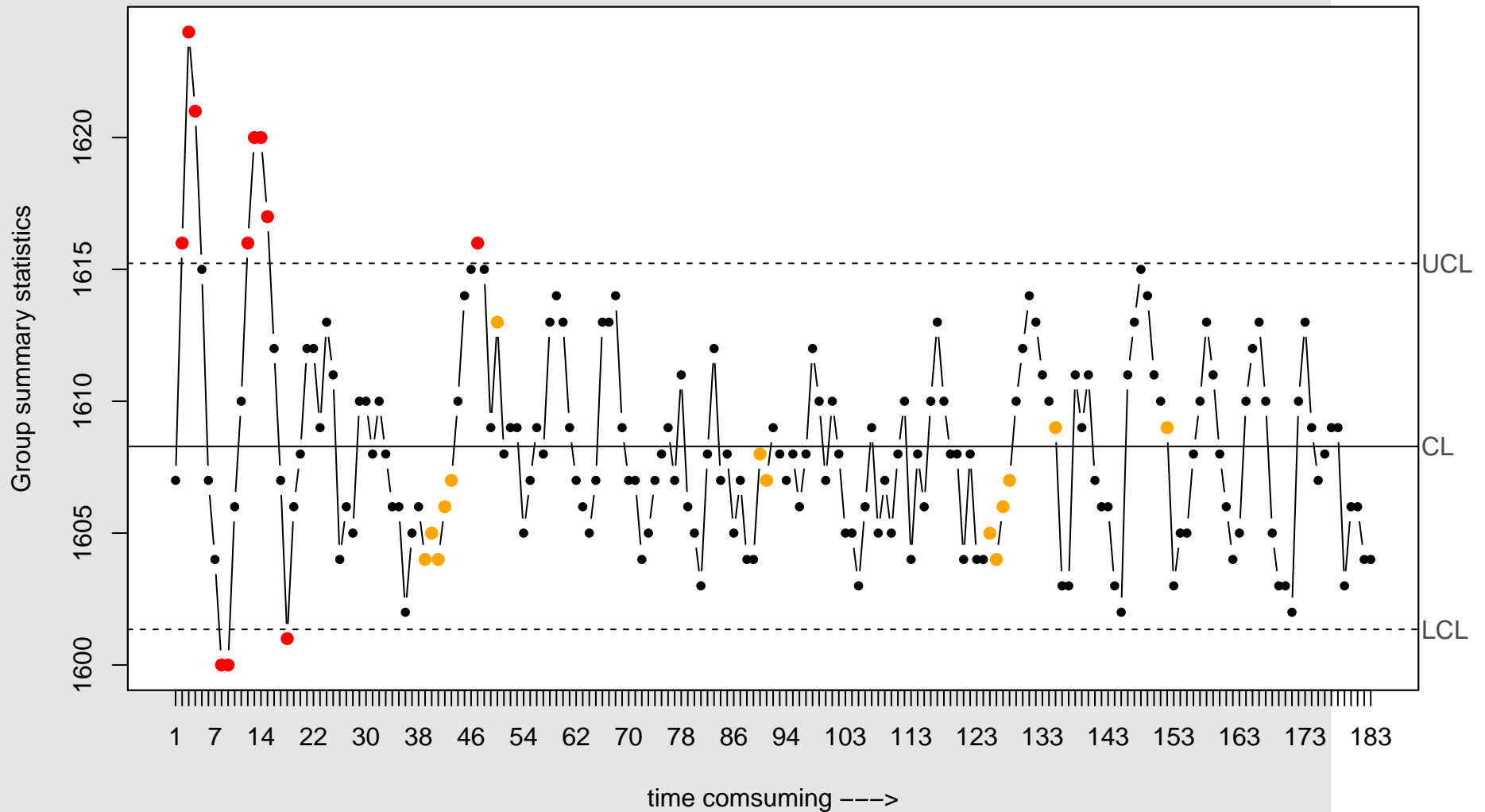
Number of groups = 183
Center = 1608.29   LCL = 1601.348   Number beyond limits = 11
StdDev = 2.313732   UCL = 1615.231   Number violating runs = 14

137th column point of this product
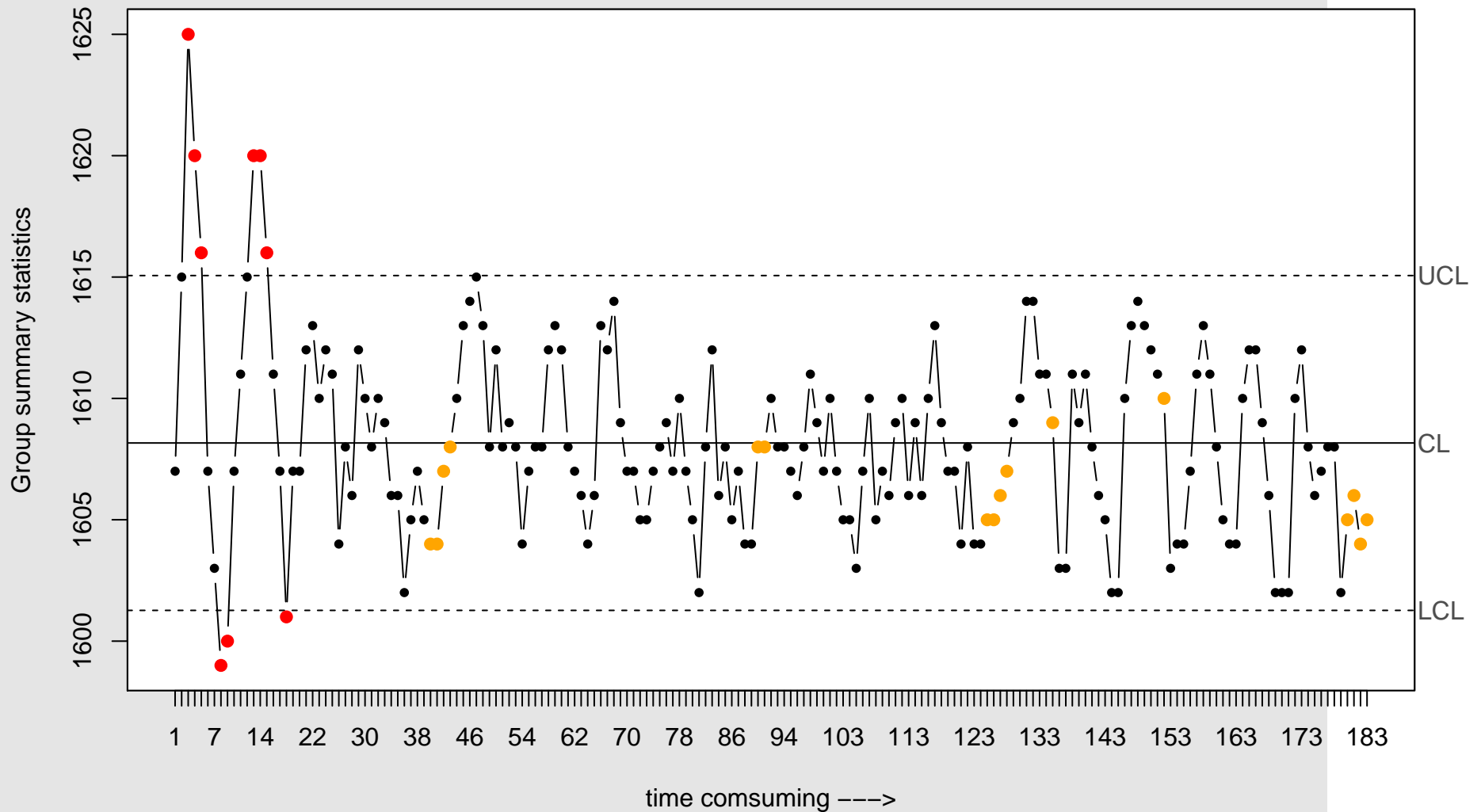
Number of groups = 183
Center = 1608.164   LCL = 1601.267   Number beyond limits = 9
StdDev = 2.299119   UCL = 1615.061   Number violating runs = 16

138th column point of this product

Group summary statistics

time comsuming ----->
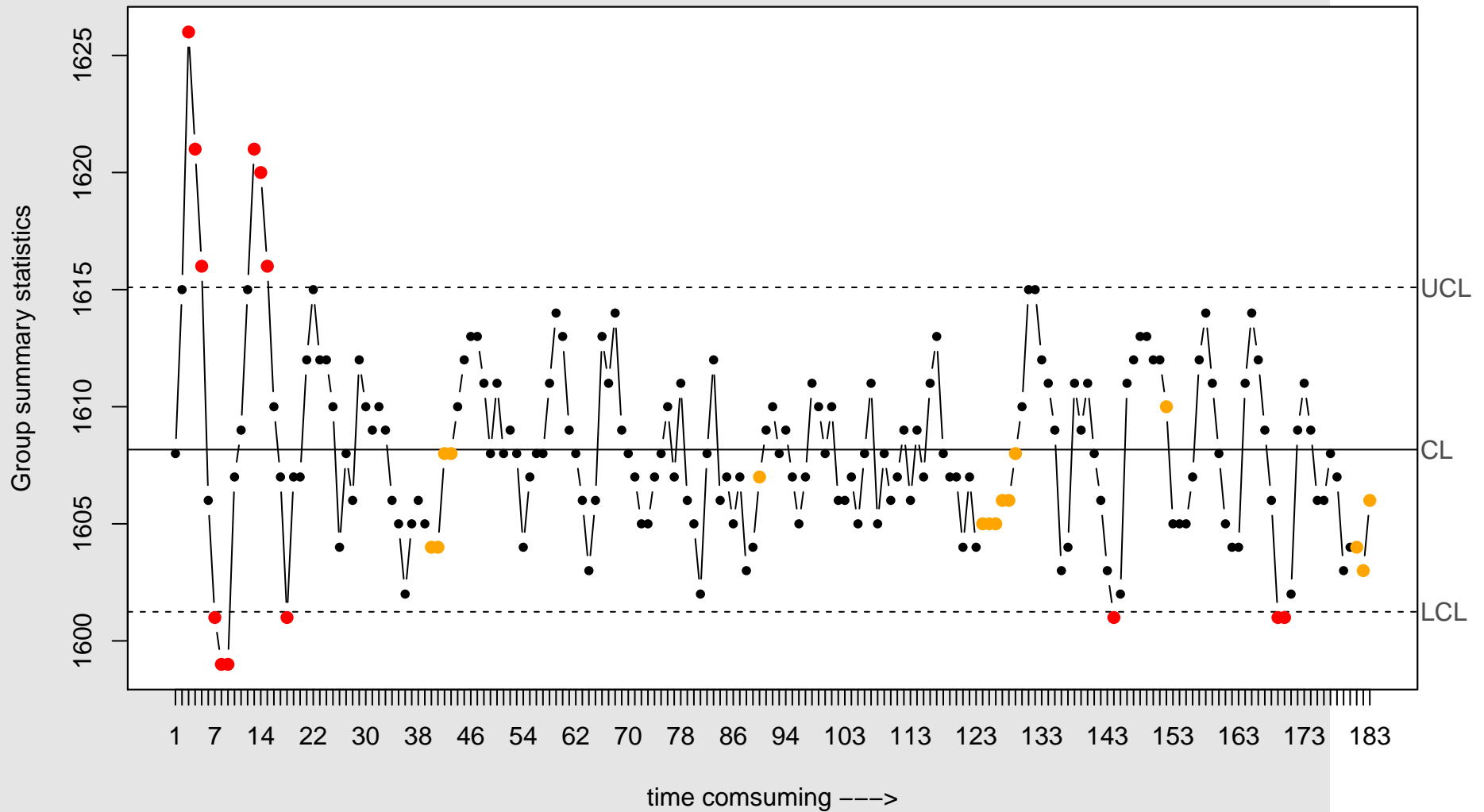
Number of groups = 183
Center = 1608.169   LCL = 1601.243   Number beyond limits = 13
StdDev = 2.308861   UCL = 1615.096   Number violating runs = 15

139th column point of this product
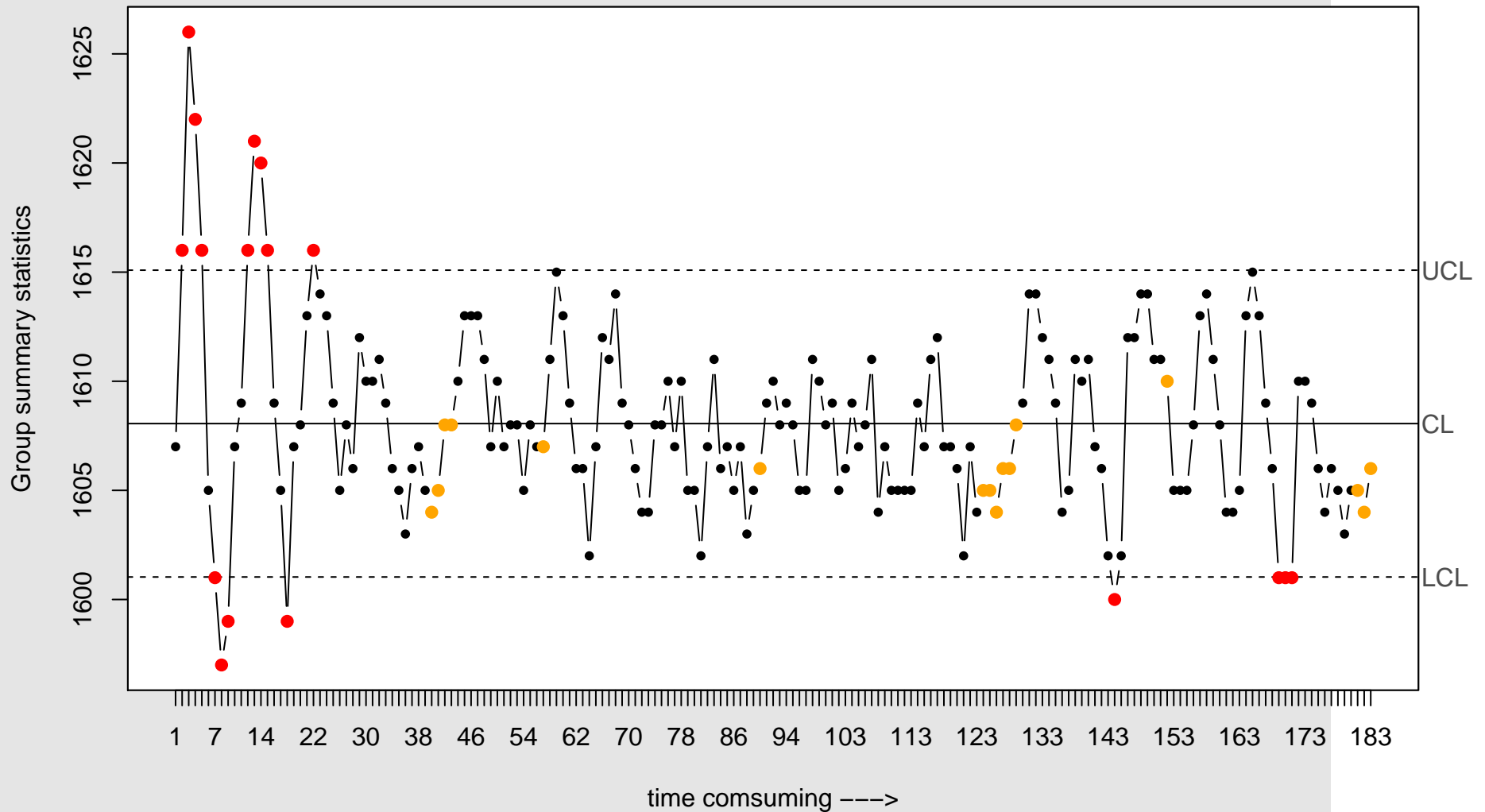
Number of groups = 183
Center = 1608.06   LCL = 1601.031   Number beyond limits = 17
StdDev = 2.342958   UCL = 1615.089   Number violating runs = 16

140th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ---->
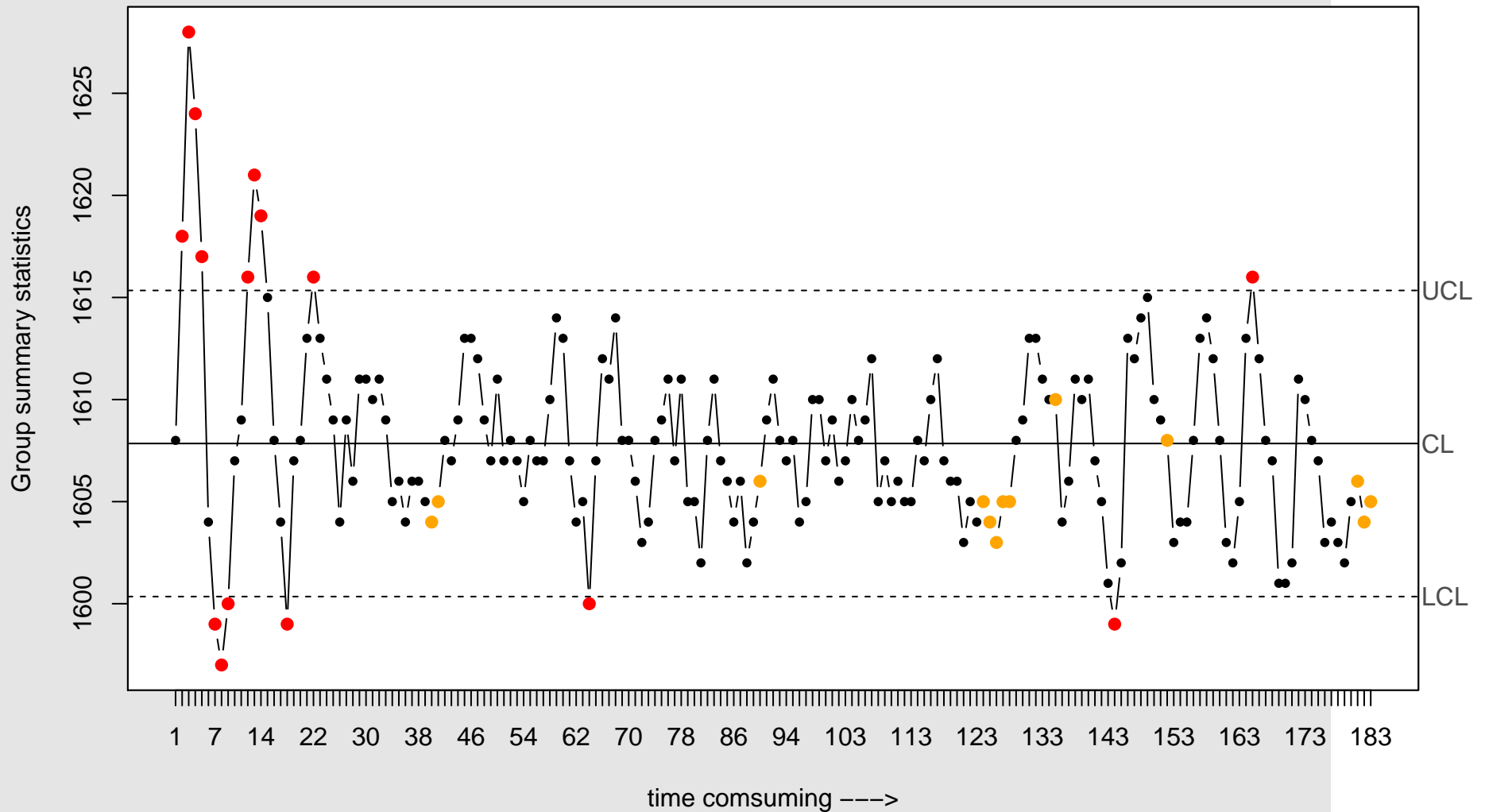
Number of groups = 183
Center = 1607.847   LCL = 1600.351   Number beyond limits = 15
StdDev = 2.498831   UCL = 1615.343   Number violating runs = 13

141th column point of this product

Group summary statistics

time comsuming --->
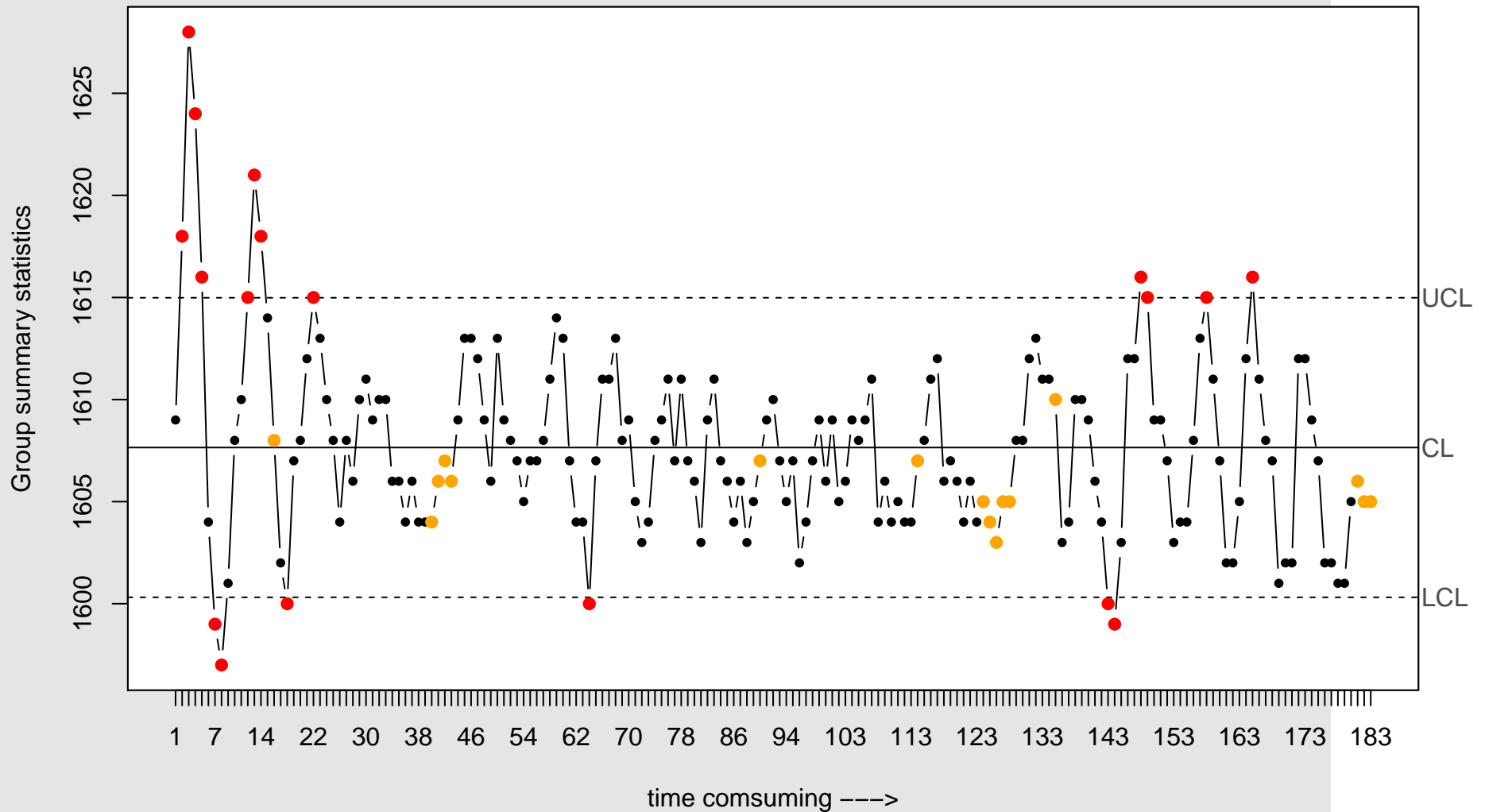
Number of groups = 183
Center = 1607.65   LCL = 1600.315   Number beyond limits = 18
StdDev = 2.44525   UCL = 1614.986   Number violating runs = 16

142th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ———>
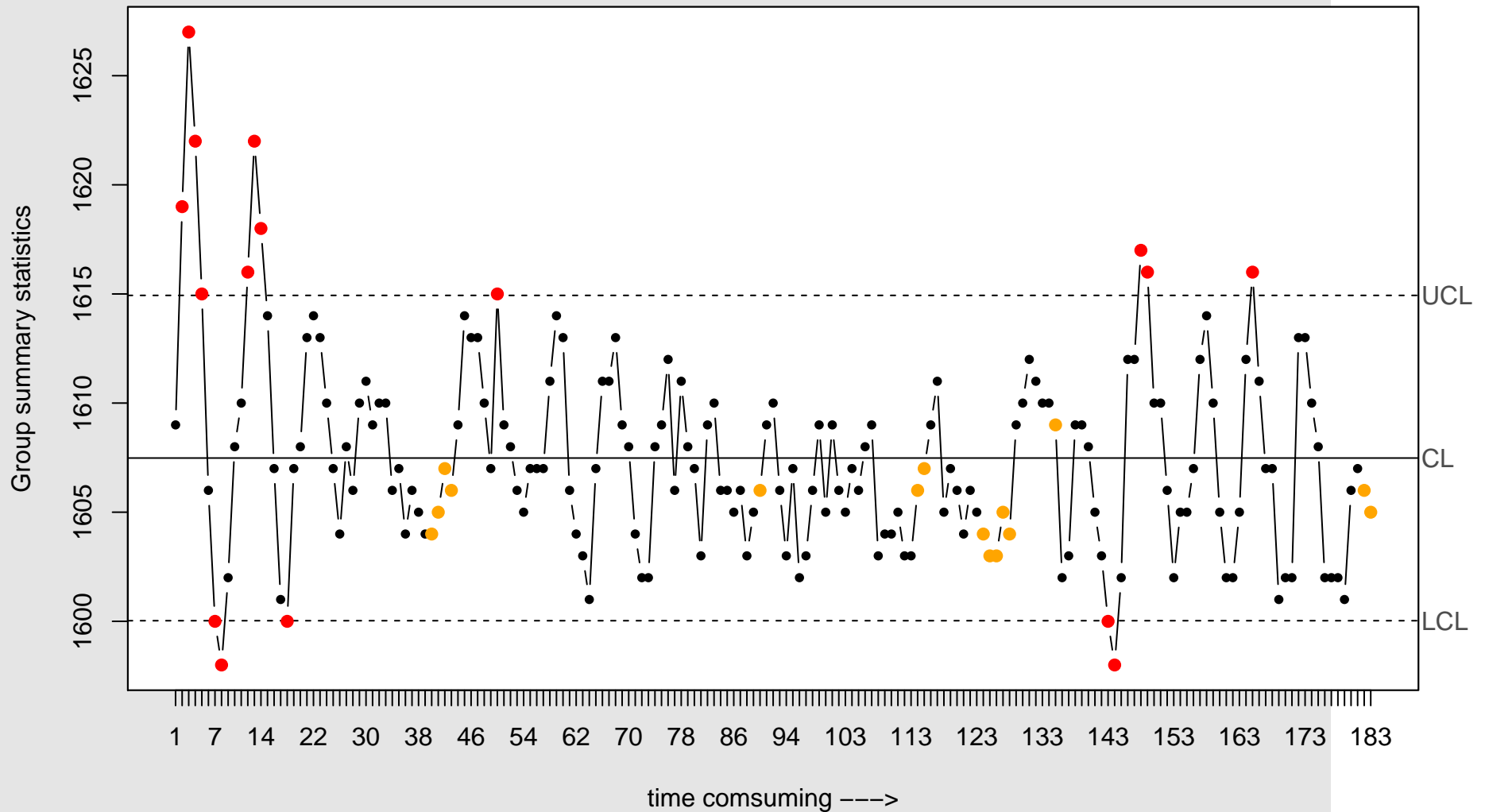
Number of groups = 183
Center = 1607.481   LCL = 1600.028   Number beyond limits = 16
StdDev = 2.484218   UCL = 1614.934   Number violating runs = 15

143th column point of this product
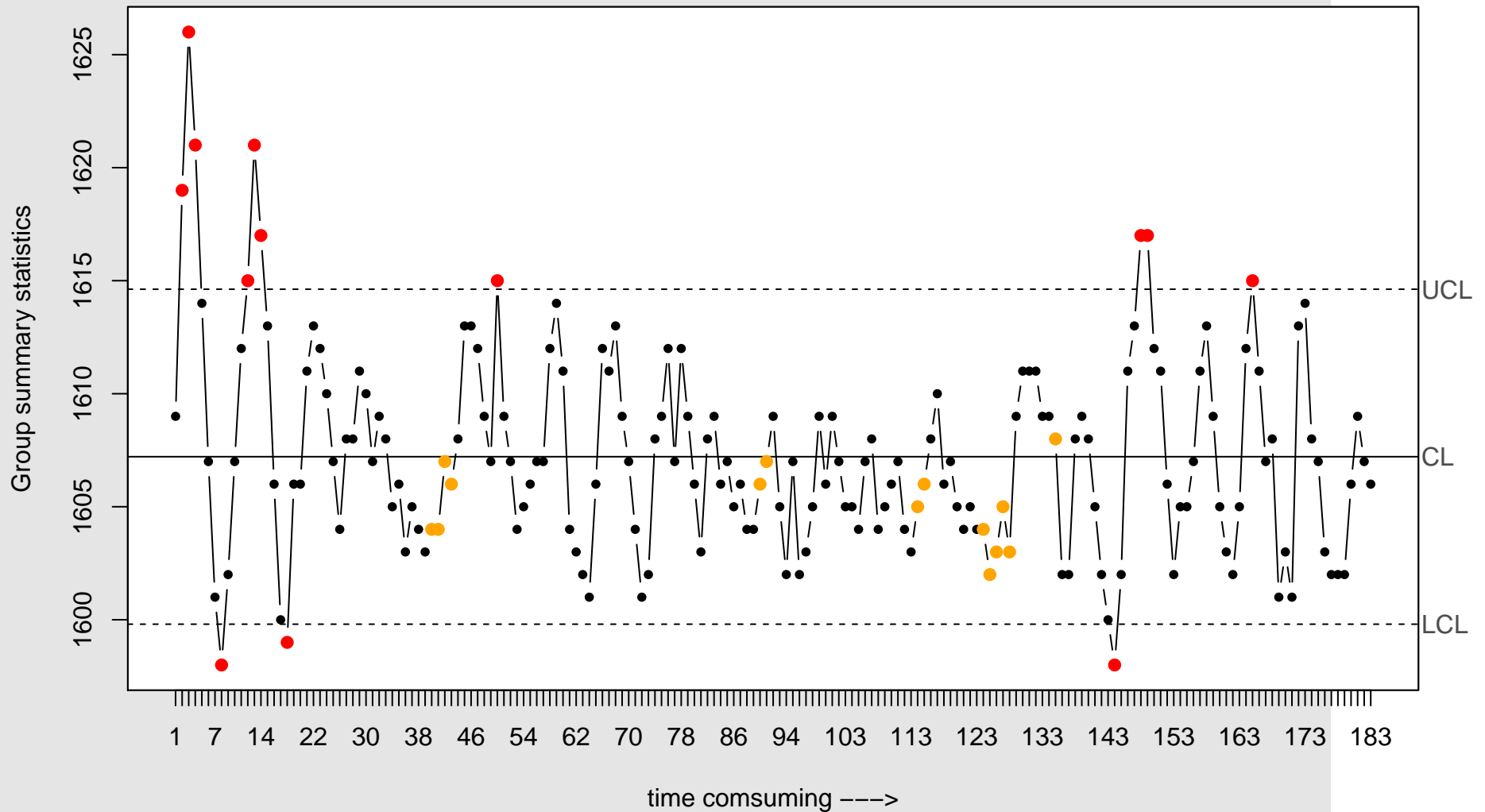
Number of groups = 183
Center = 1607.213   LCL = 1599.804   Number beyond limits = 13
StdDev = 2.469605   UCL = 1614.622   Number violating runs = 14

144th column point of this product

Group summary statistics

time comsuming –––>

Number of groups = 183
Center = 1607.071
StdDev = 2.479347

LCL = 1599.633
UCL = 1614.509

Number beyond limits = 11
Number violating runs = 14

145th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1606.973   LCL = 1599.666   Number beyond limits = 14
StdDev = 2.435508   UCL = 1614.279   Number violating runs = 9

146th column point of this product

Number of groups = 183
Center = 1607.027   LCL = 1599.794   Number beyond limits = 12
StdDev = 2.411153   UCL = 1614.261   Number violating runs = 22

147th column point of this product

Group summary statistics

time comsuming ––––>
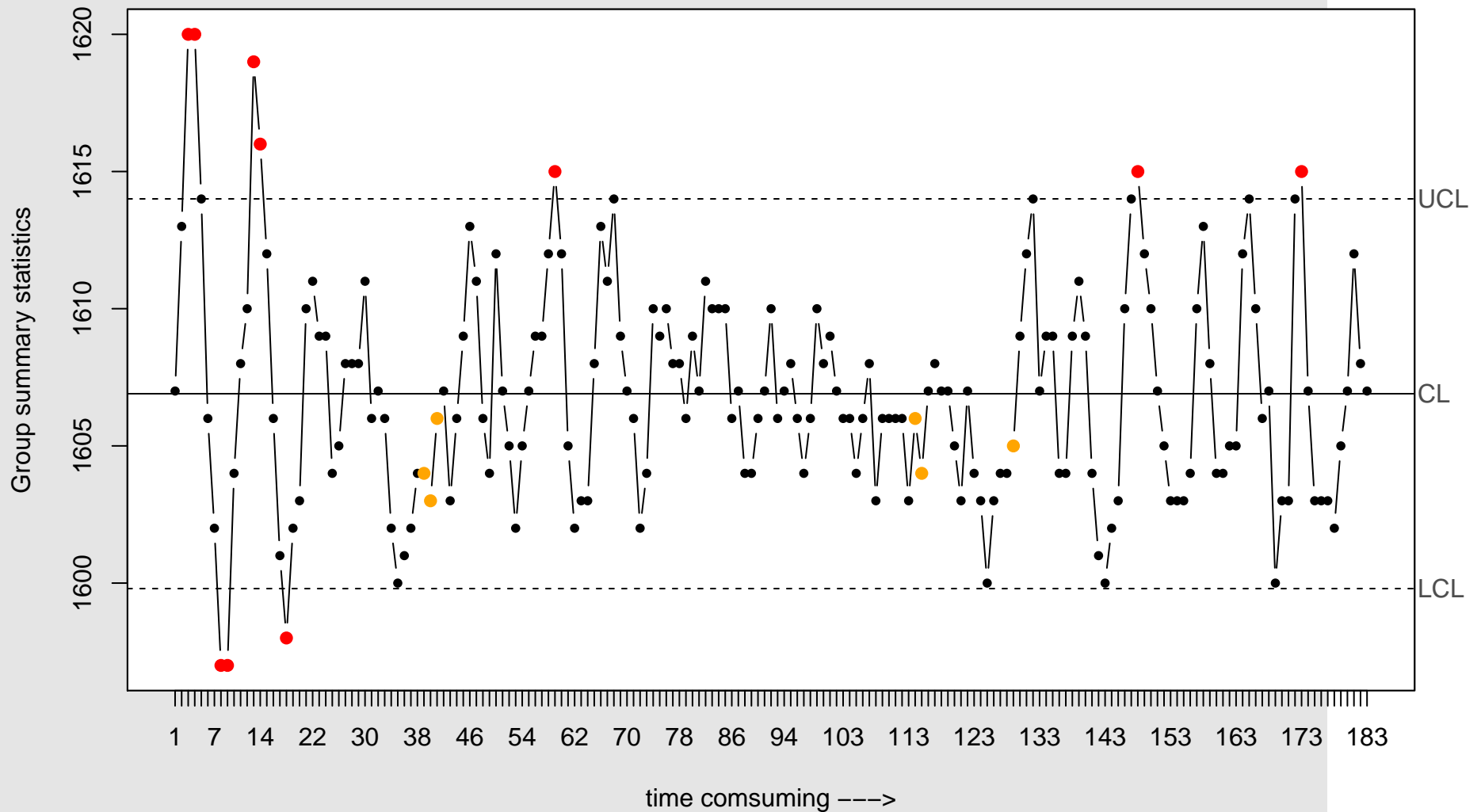
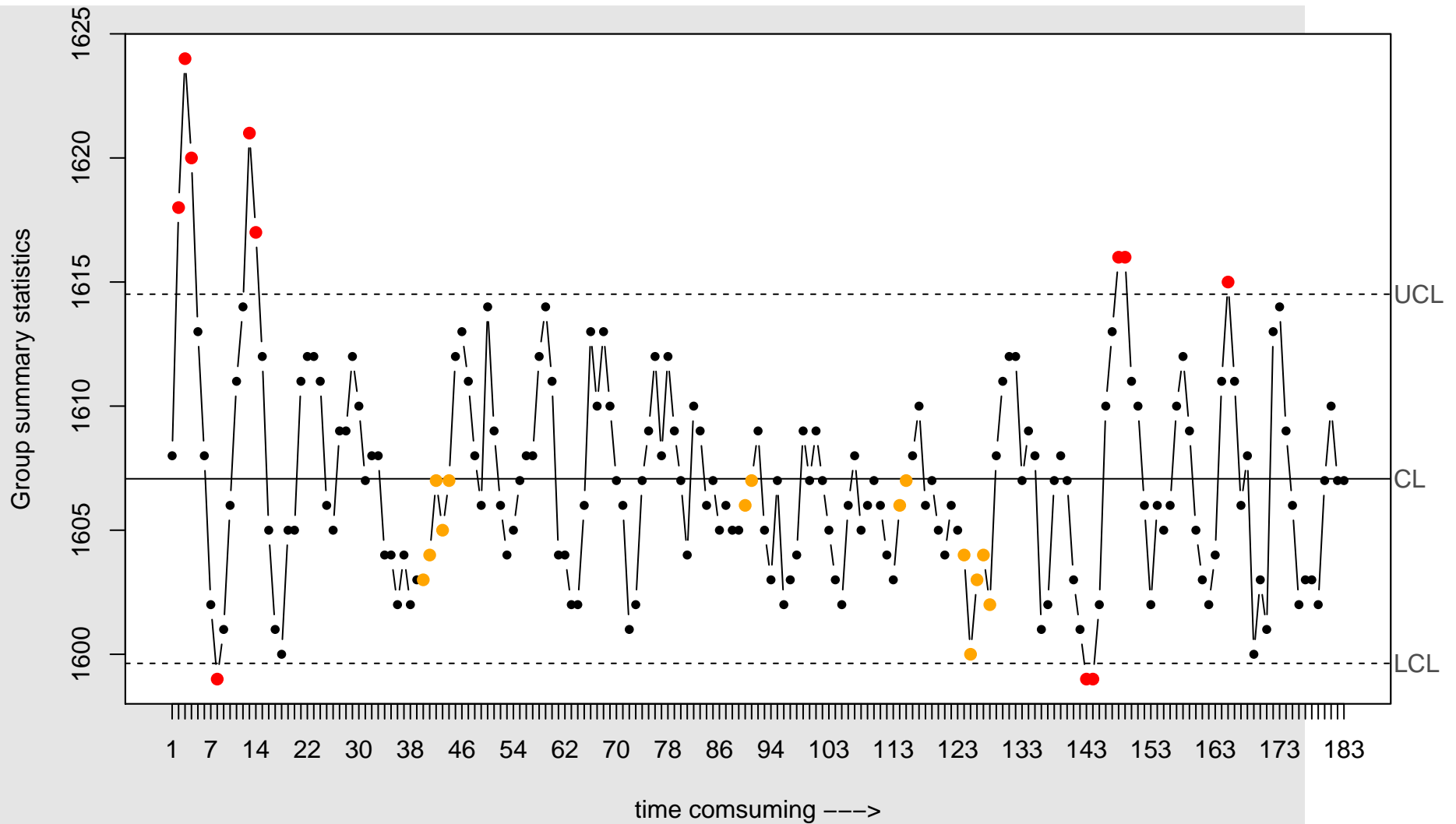Number of groups = 183
Center = 1606.902
StdDev = 2.367314

LCL = 1599.8
UCL = 1614.004

Number beyond limits = 10
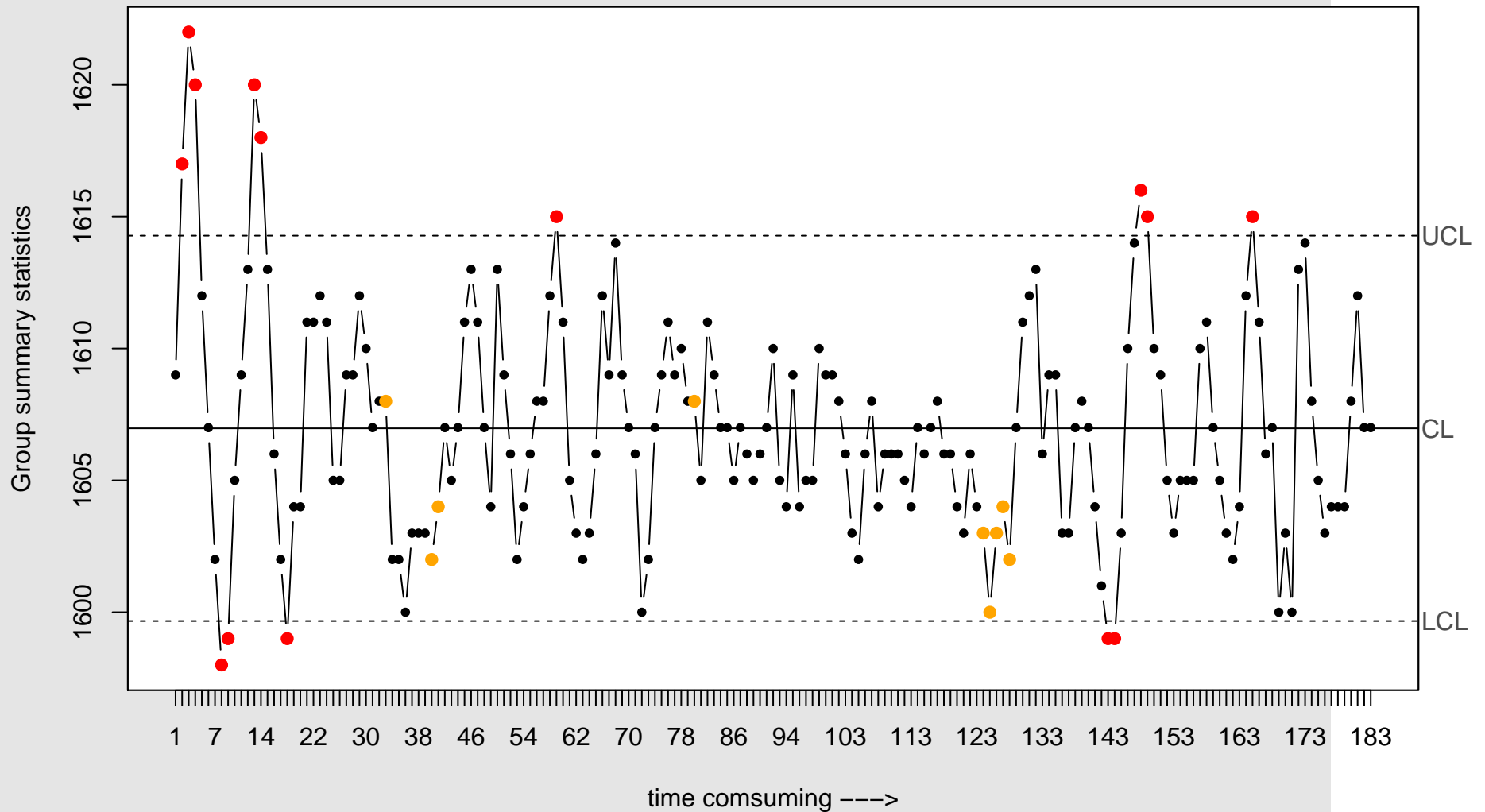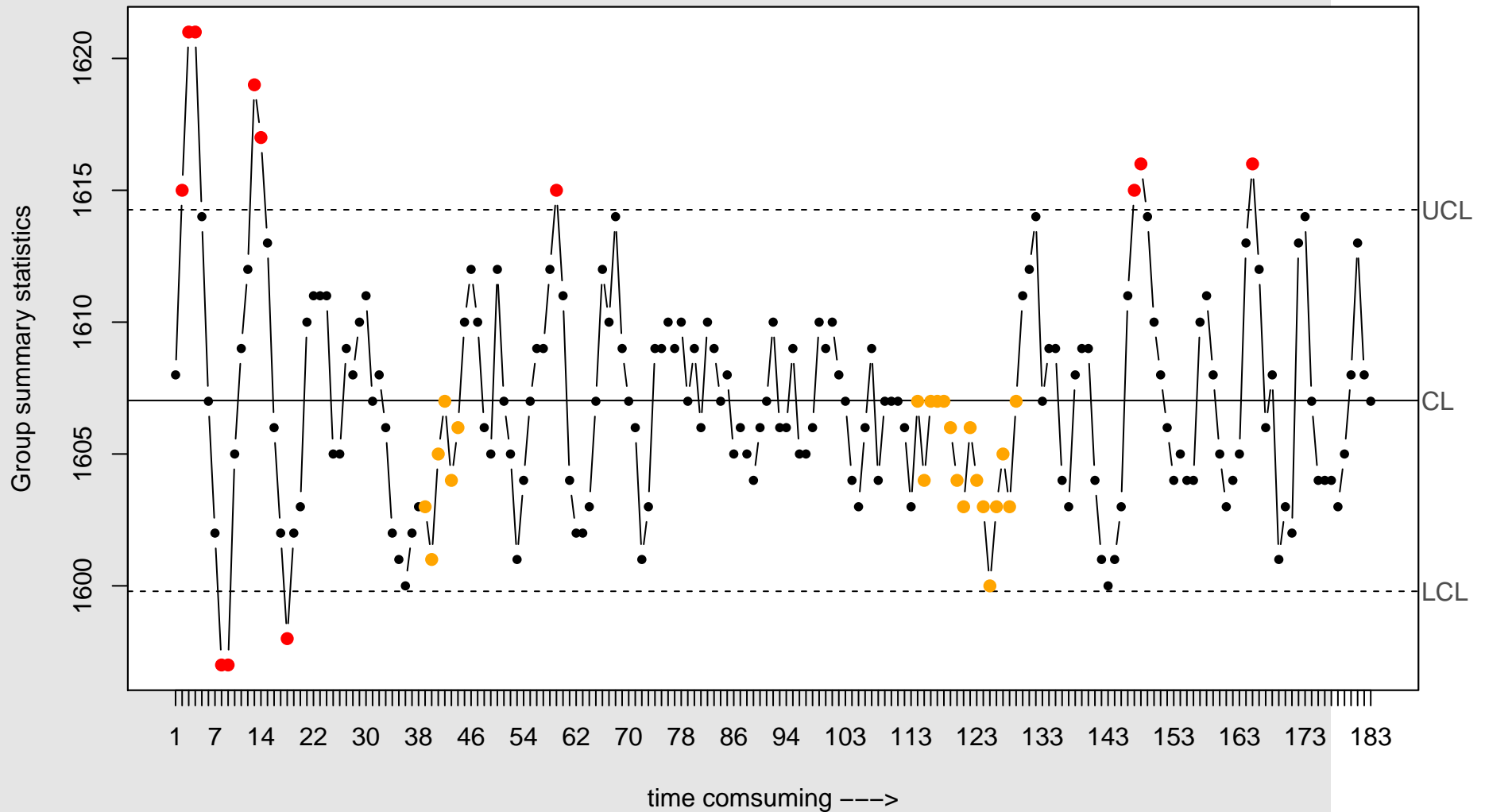Number violating runs = 6

148th column point of this product
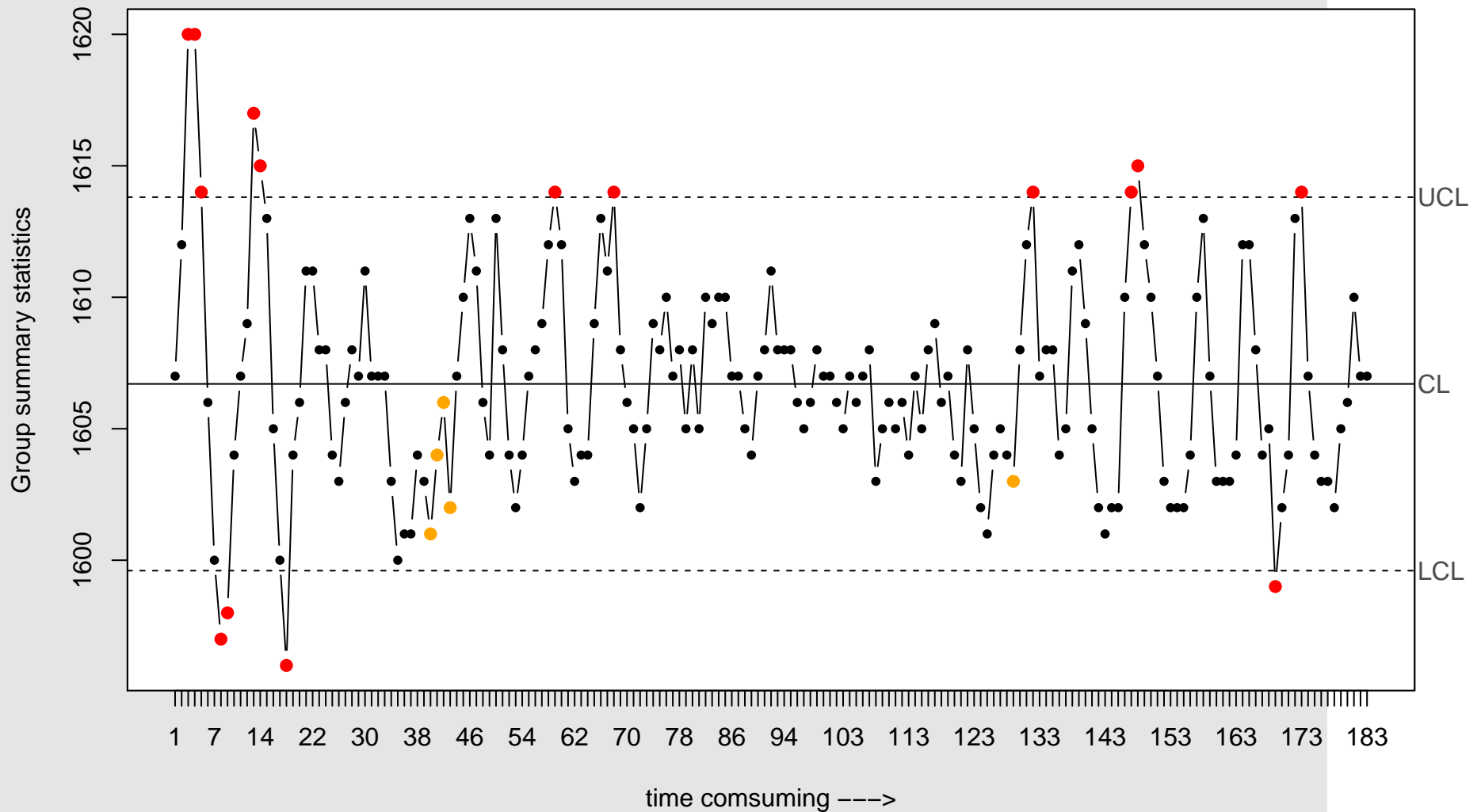
Number of groups = 183
Center = 1606.705
StdDev = 2.367314

LCL = 1599.603
UCL = 1613.807

Number beyond limits = 15
Number violating runs = 5

149th column point of this product

Group summary statistics

time comsuming –––>
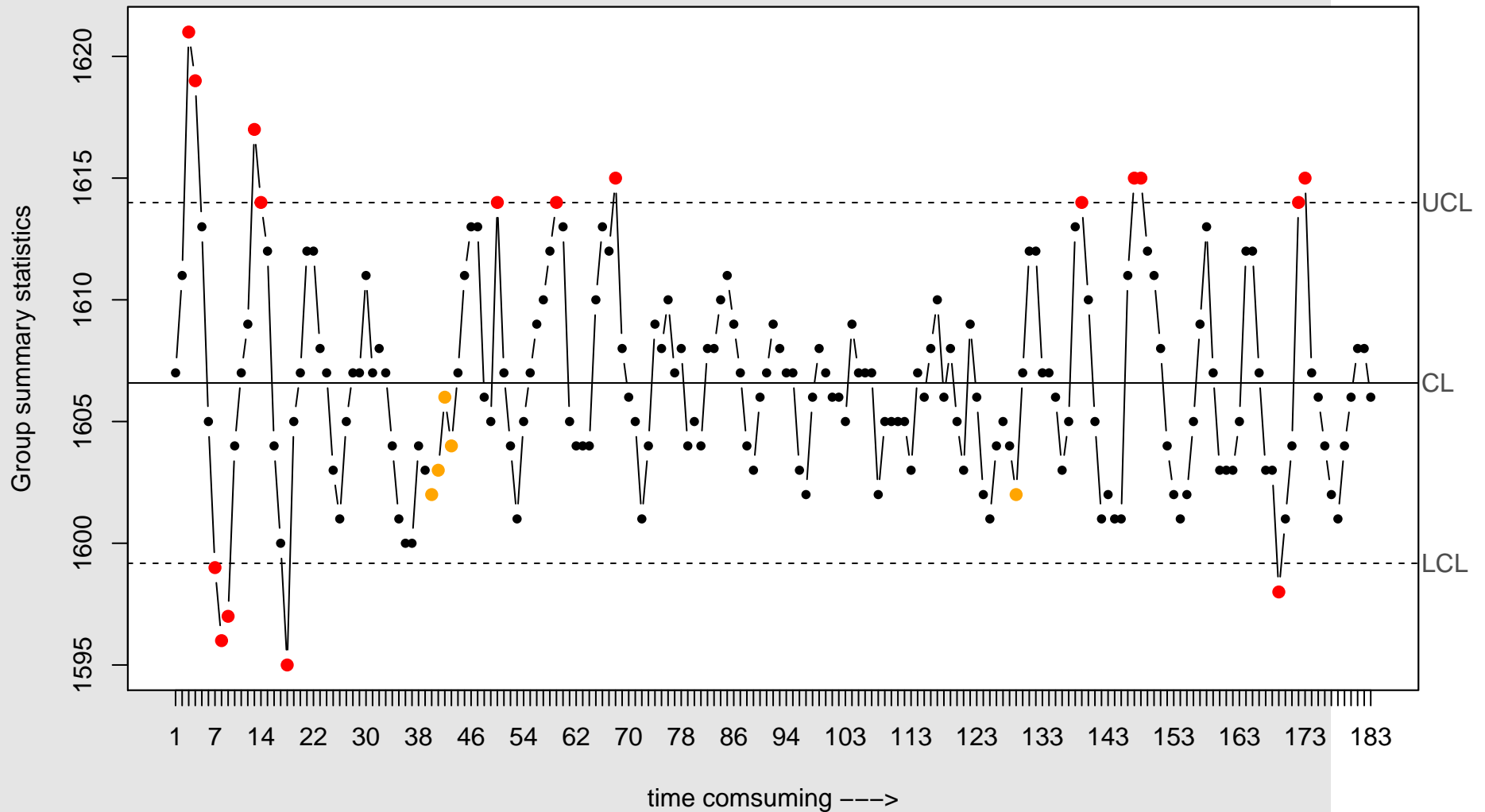
Number of groups = 183
Center = 1606.585
StdDev = 2.469605

LCL = 1599.176
UCL = 1613.994

Number beyond limits = 17
Number violating runs = 5

150th column point of this product

Group summary statistics

1620
1615
1610
1605
1600
1595

UCL
CL
LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ––––>
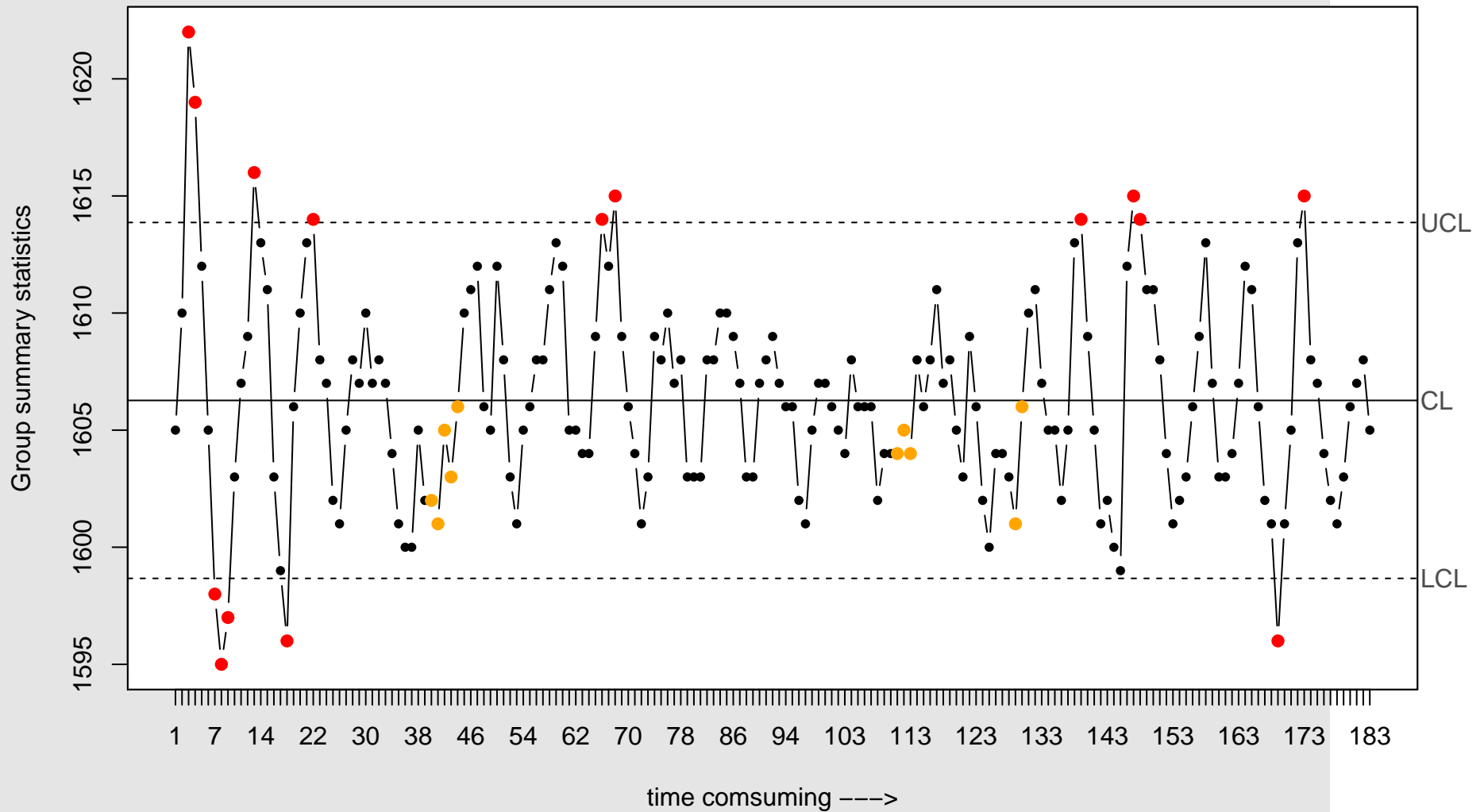
Number of groups = 183
Center = 1606.268   LCL = 1598.669   Number beyond limits = 15
StdDev = 2.532928   UCL = 1613.867   Number violating runs = 10

151th column point of this product

Group summary statistics

time comsuming ———>

Number of groups = 183
Center = 1605.907
StdDev = 2.532928

LCL = 1598.308
UCL = 1613.506

Number beyond limits = 13
Number violating runs = 6

152th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1605.885   LCL = 1598.228   Number beyond limits = 15
StdDev = 2.552412   UCL = 1613.542   Number violating runs = 0

153th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1605.71   LCL = 1598.404   Number beyond limits = 13
StdDev = 2.435508   UCL = 1613.017   Number violating runs = 1

154th column point of this product

Group summary statistics

time comsuming ---->
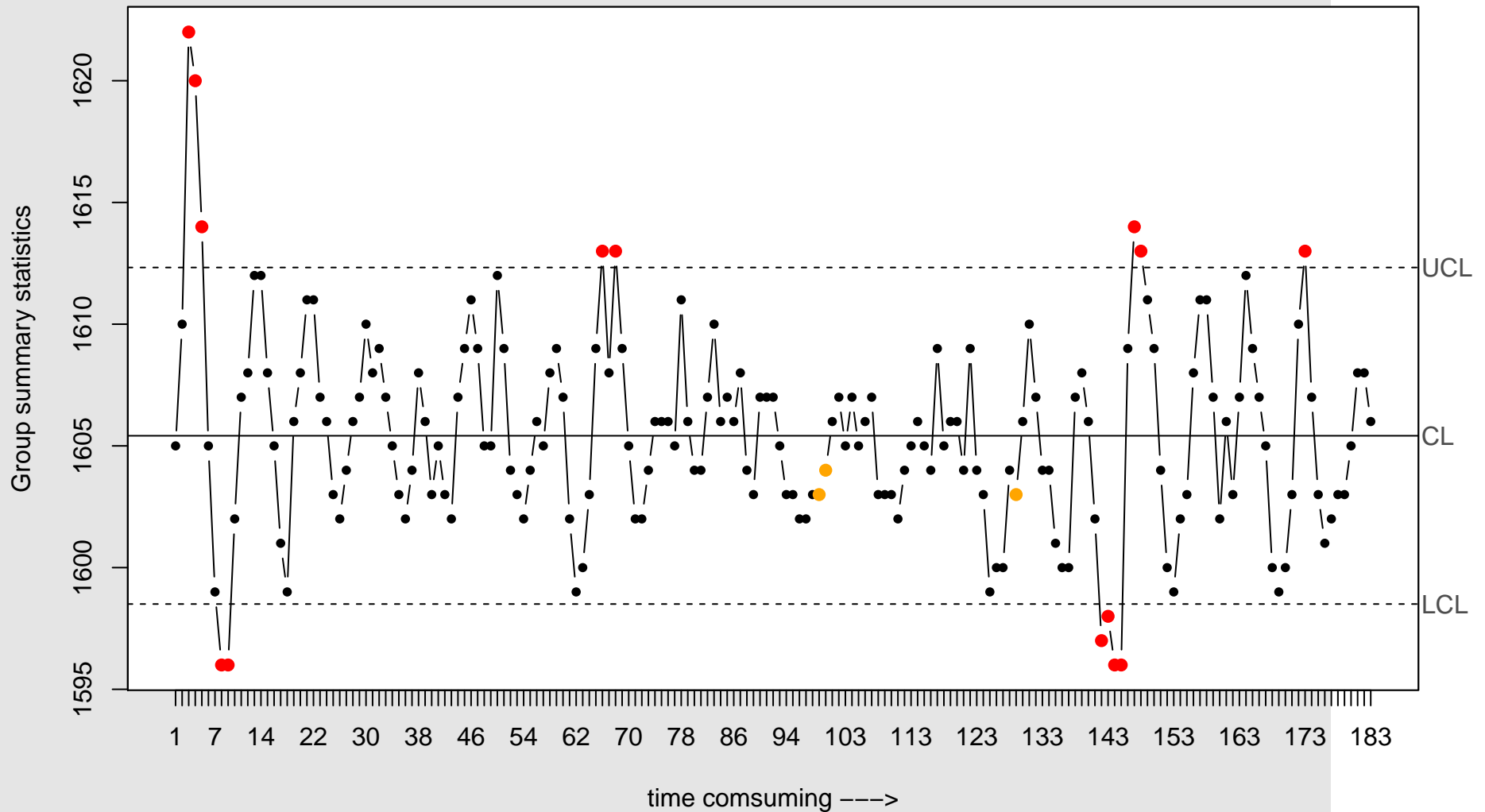
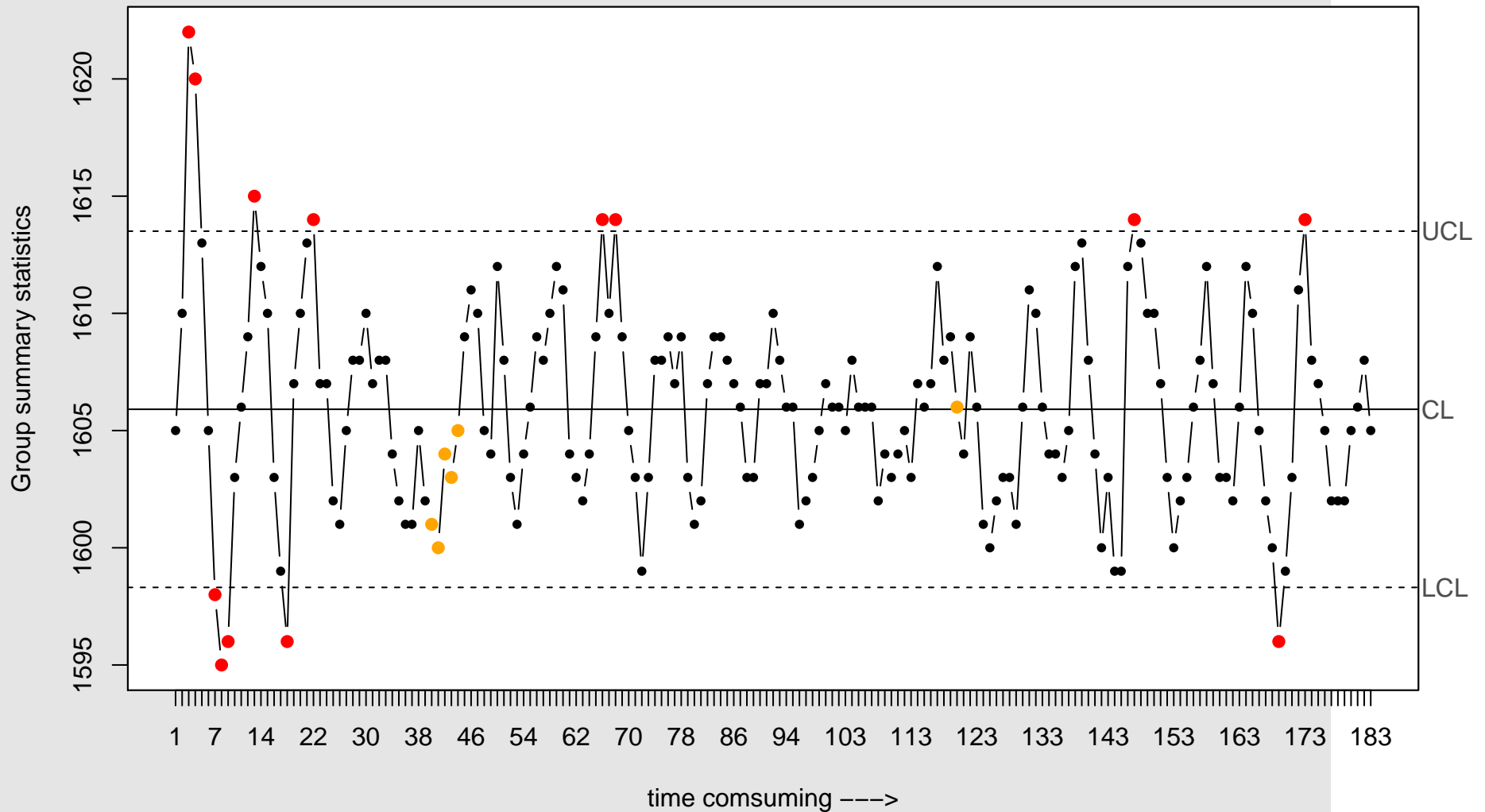Number of groups = 183
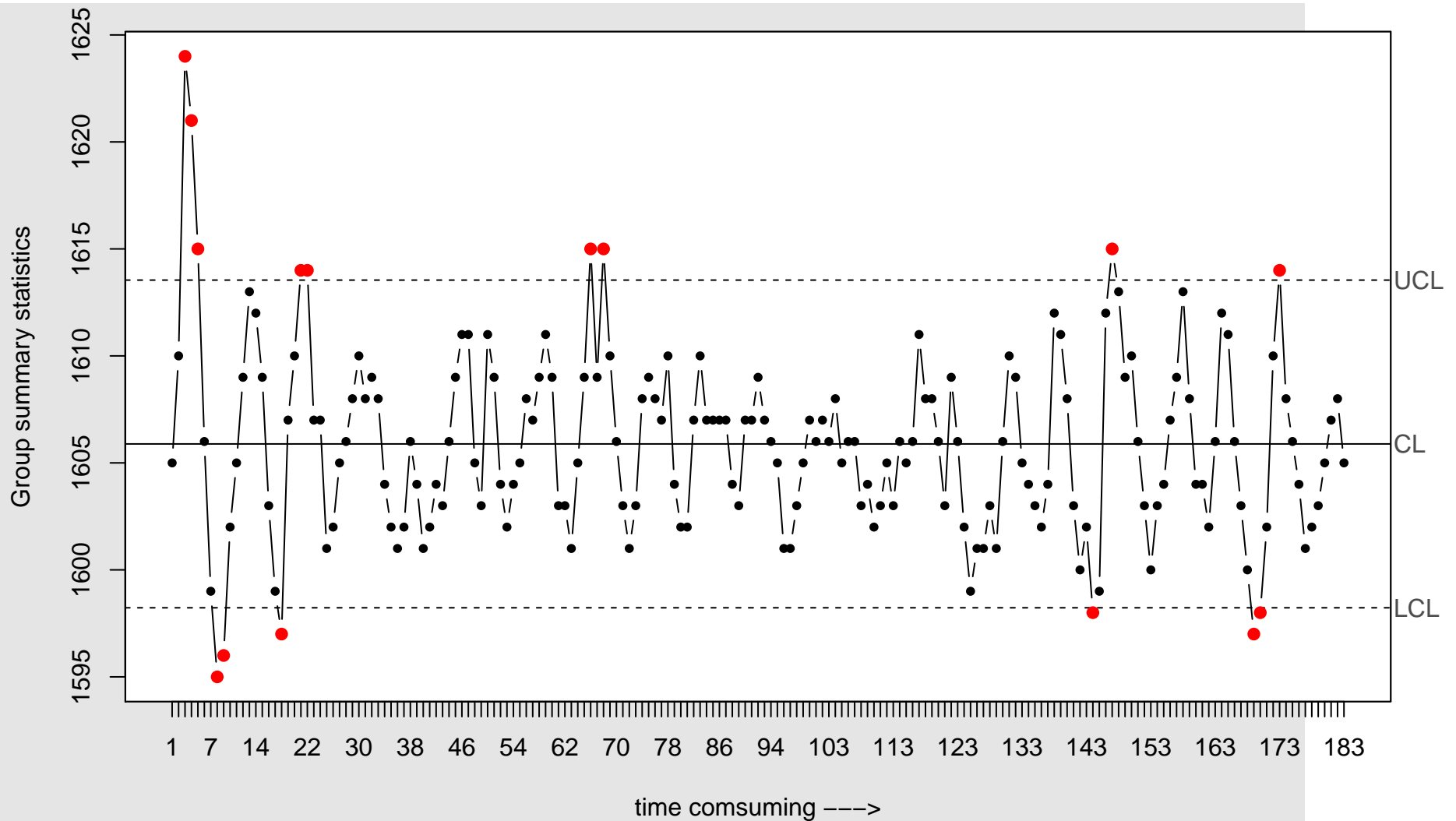Center = 1605.415
StdDev = 2.30399

LCL = 1598.503
UCL = 1612.327

Number beyond limits = 14
Number violating runs = 3

155th column point of this product
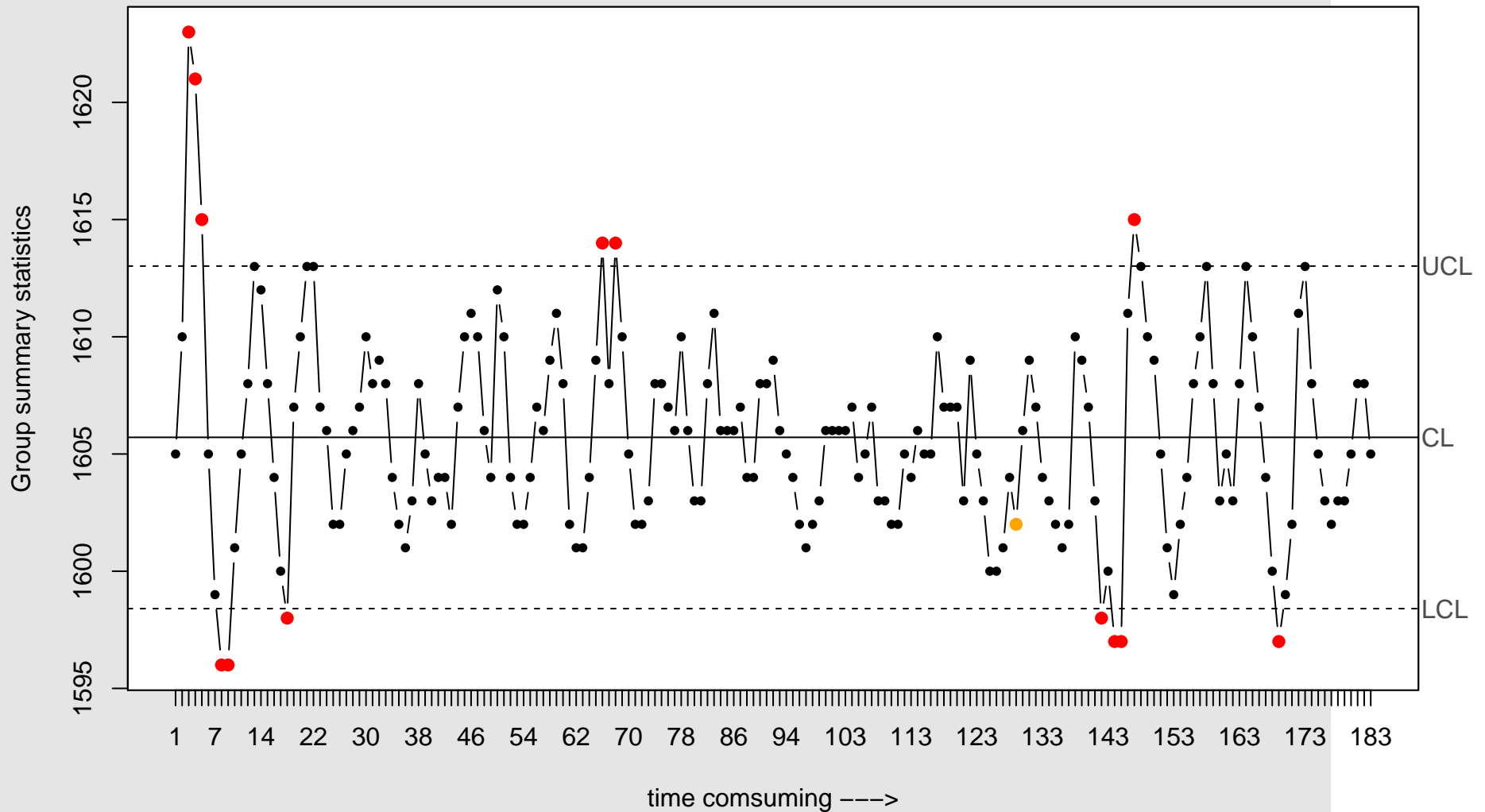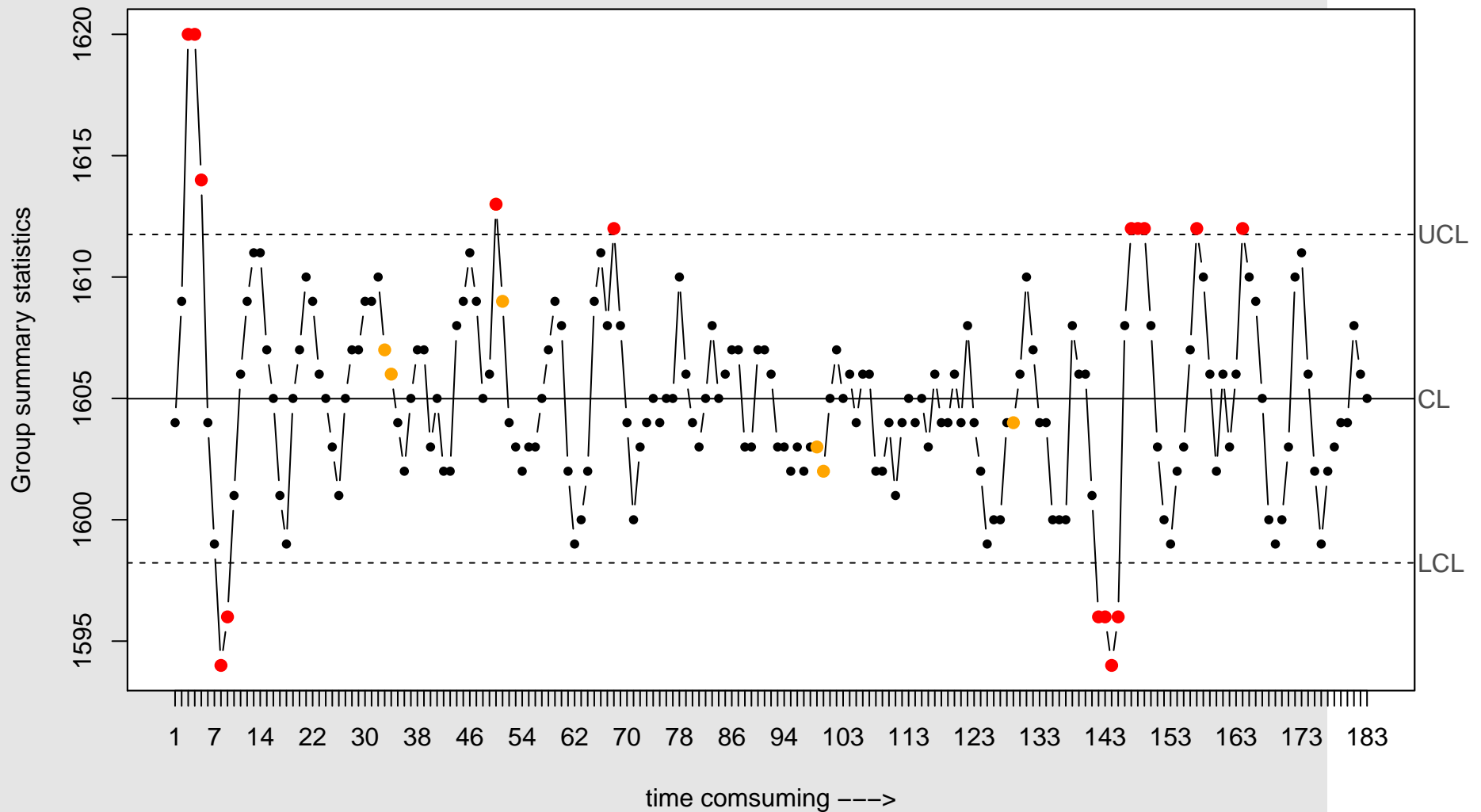

Number of groups = 183
Center = 1604.989
StdDev = 2.25528

LCL = 1598.223
UCL = 1611.755

Number beyond limits = 16
Number violating runs = 7

156th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1604.541   LCL = 1597.834   Number beyond limits = 13
StdDev = 2.235796   UCL = 1611.248   Number violating runs = 6

157th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1603.934   LCL = 1597.665   Number beyond limits = 15
StdDev = 2.089666   UCL = 1610.203   Number violating runs = 6

158th column point of this product

Group summary statistics

time comsuming ---->
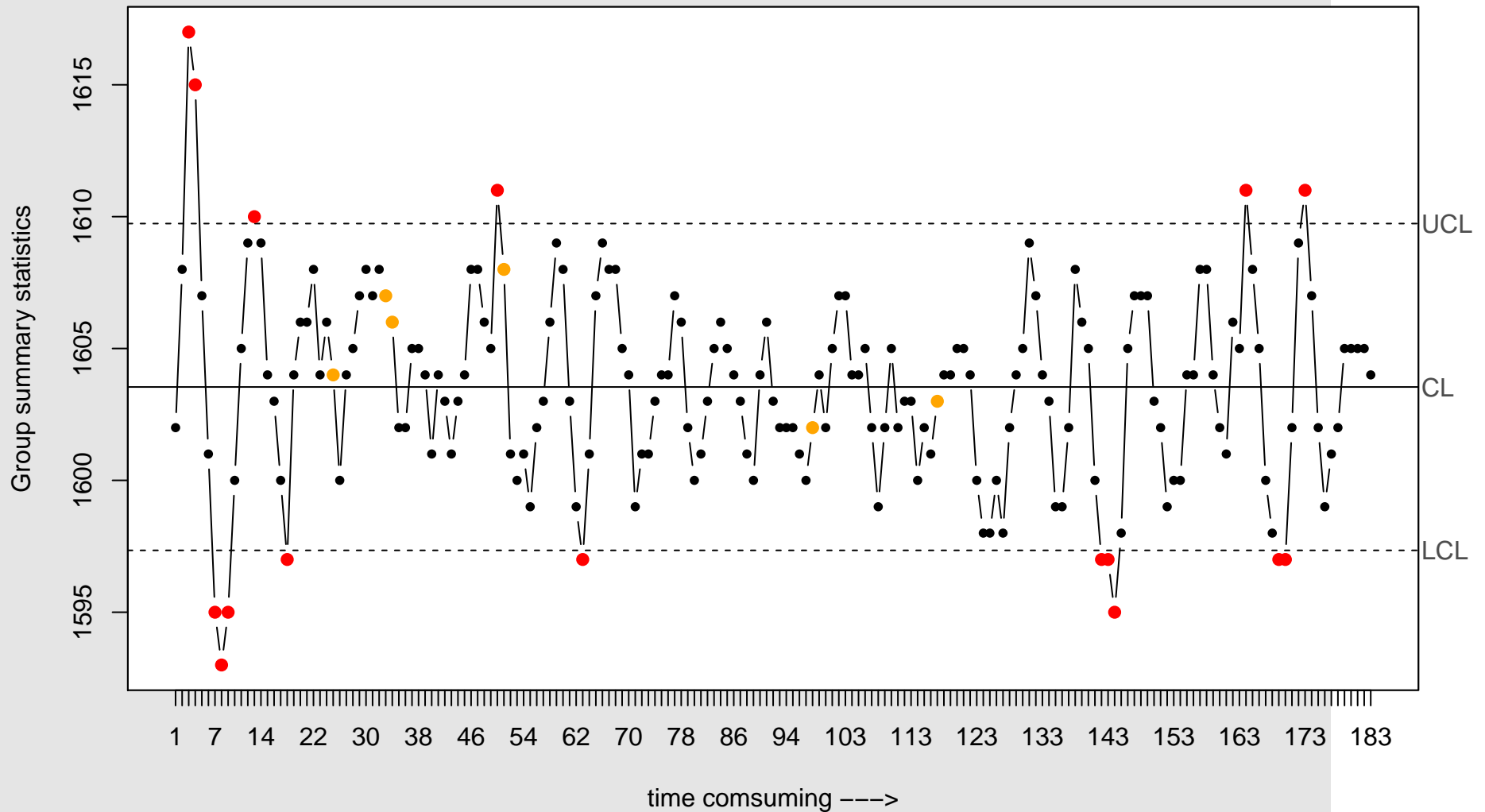
Number of groups = 183
Center = 1603.541
StdDev = 2.065311

LCL = 1597.345
UCL = 1609.737

Number beyond limits = 16
Number violating runs = 6

159th column point of this product

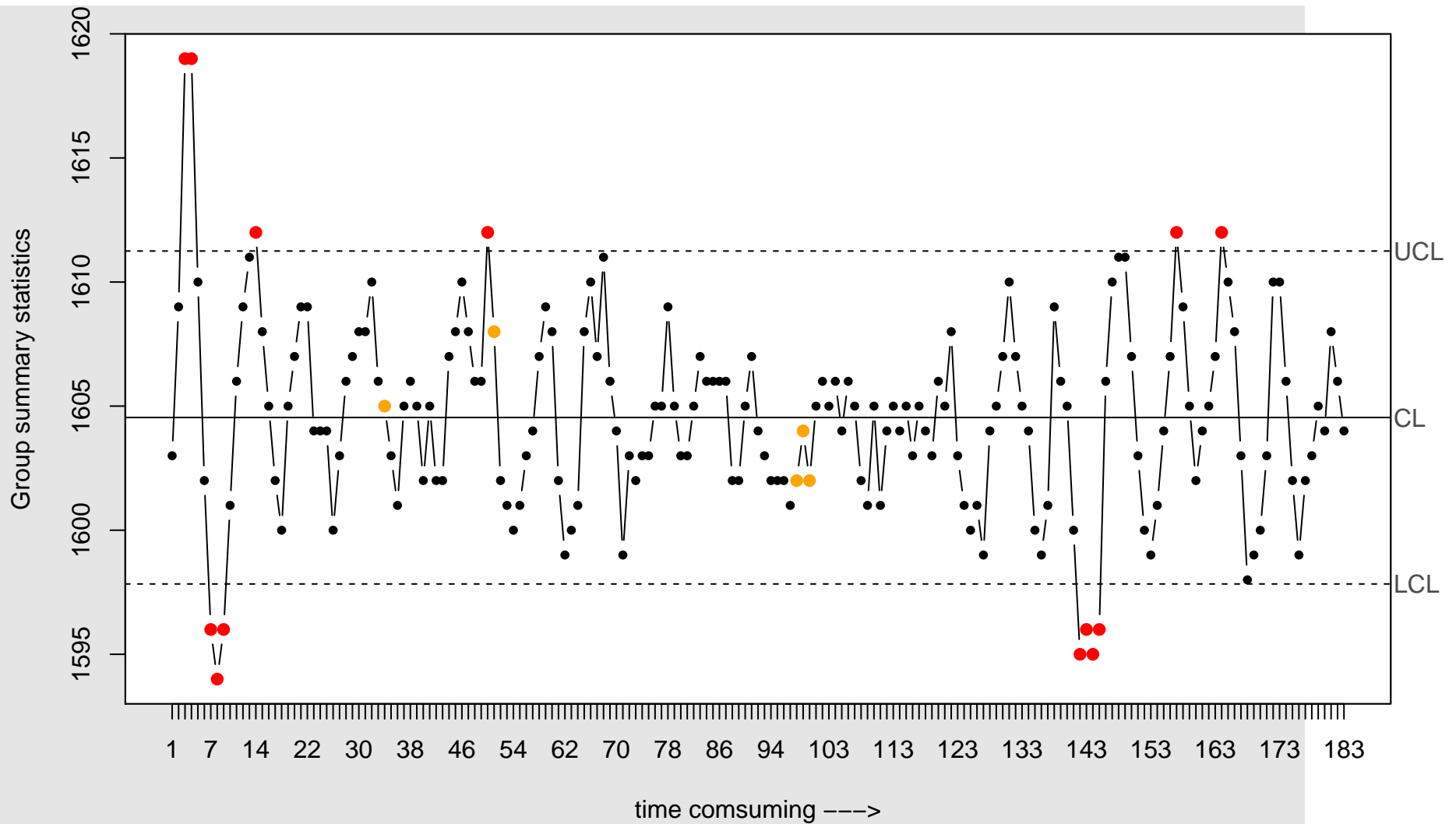Group summary statistics

time comsuming ––––>
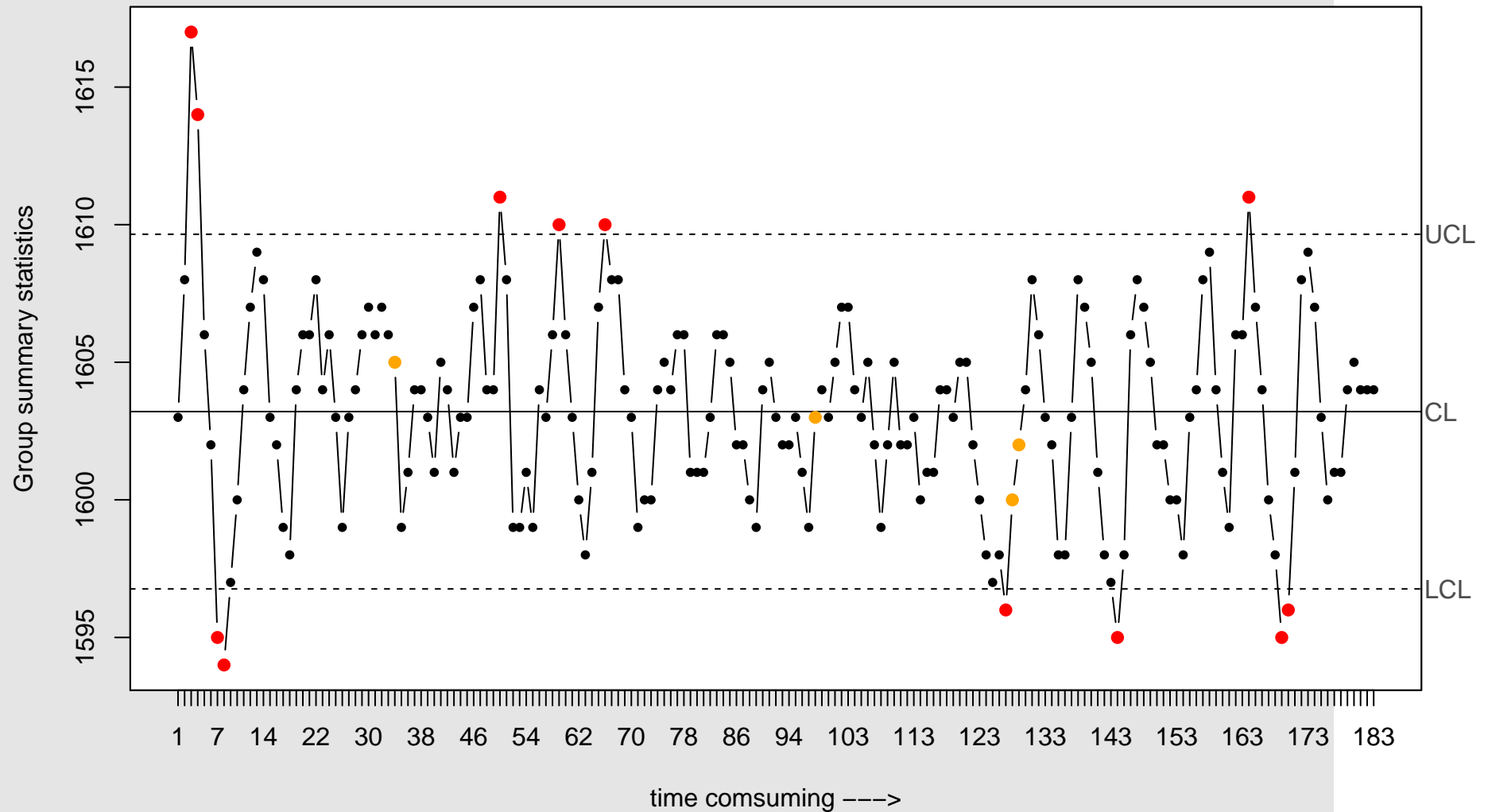
Number of groups = 183
Center = 1603.208
StdDev = 2.148118

LCL = 1596.763
UCL = 1609.652

Number beyond limits = 12
Number violating runs = 4

160th column point of this product

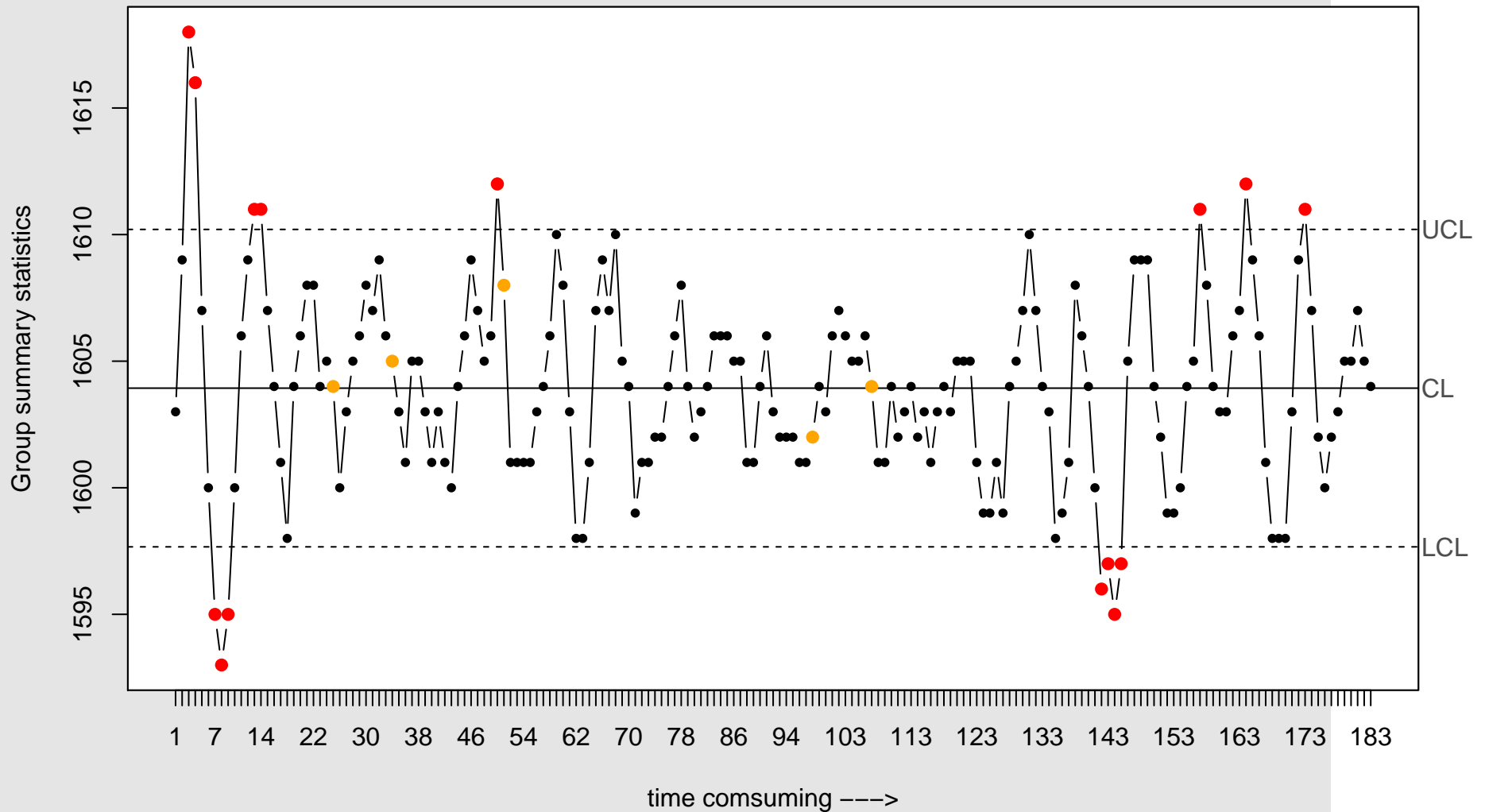Group summary statistics

time comsuming –––>
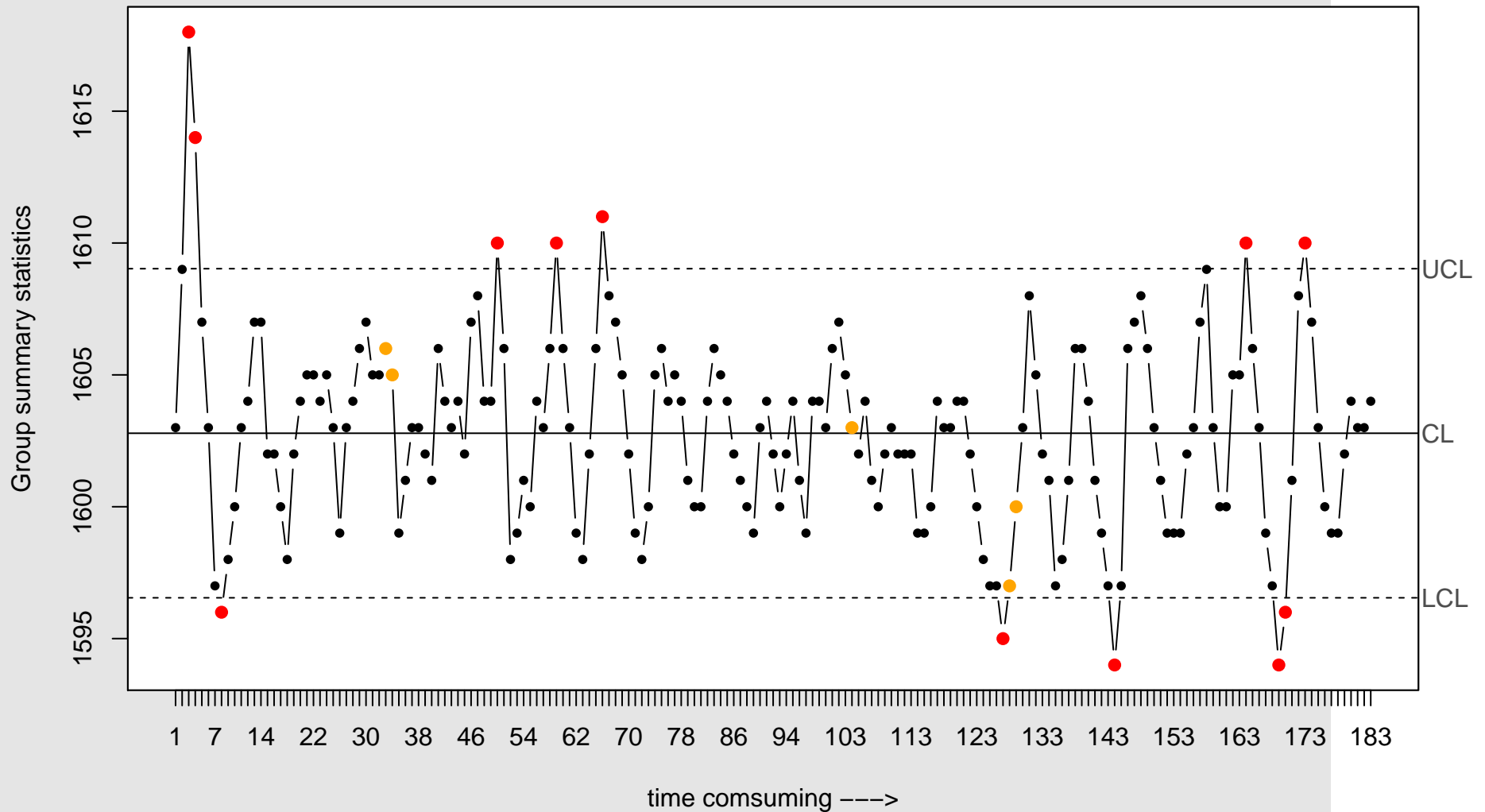
Number of groups = 183
Center = 1602.787
StdDev = 2.079924

LCL = 1596.547
UCL = 1609.027

Number beyond limits = 12
Number violating runs = 5

161th column point of this product

Group summary statistics

time comsuming –––>
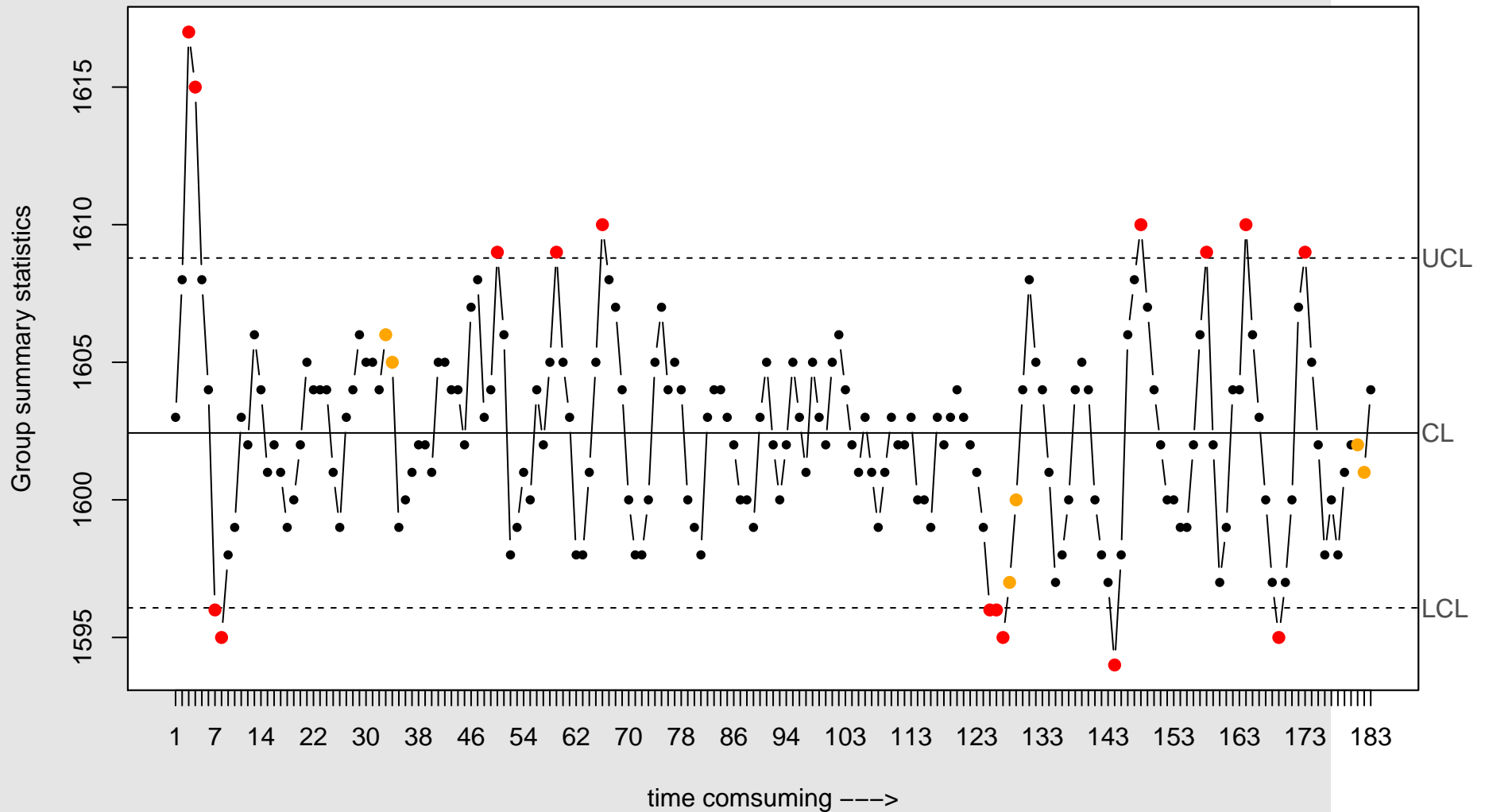
Number of groups = 183
Center = 1602.432   LCL = 1596.075   Number beyond limits = 16
StdDev = 2.118892   UCL = 1608.788   Number violating runs = 6

162th column point of this product

Group summary statistics

1615
1610
1605
1600
1595

UCL

CL

LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ----->

Number of groups = 183
Center = 1602.126
StdDev = 2.143247

LCL = 1595.696
UCL = 1608.555

Number beyond limits = 14
Number violating runs = 5

163th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ––––>
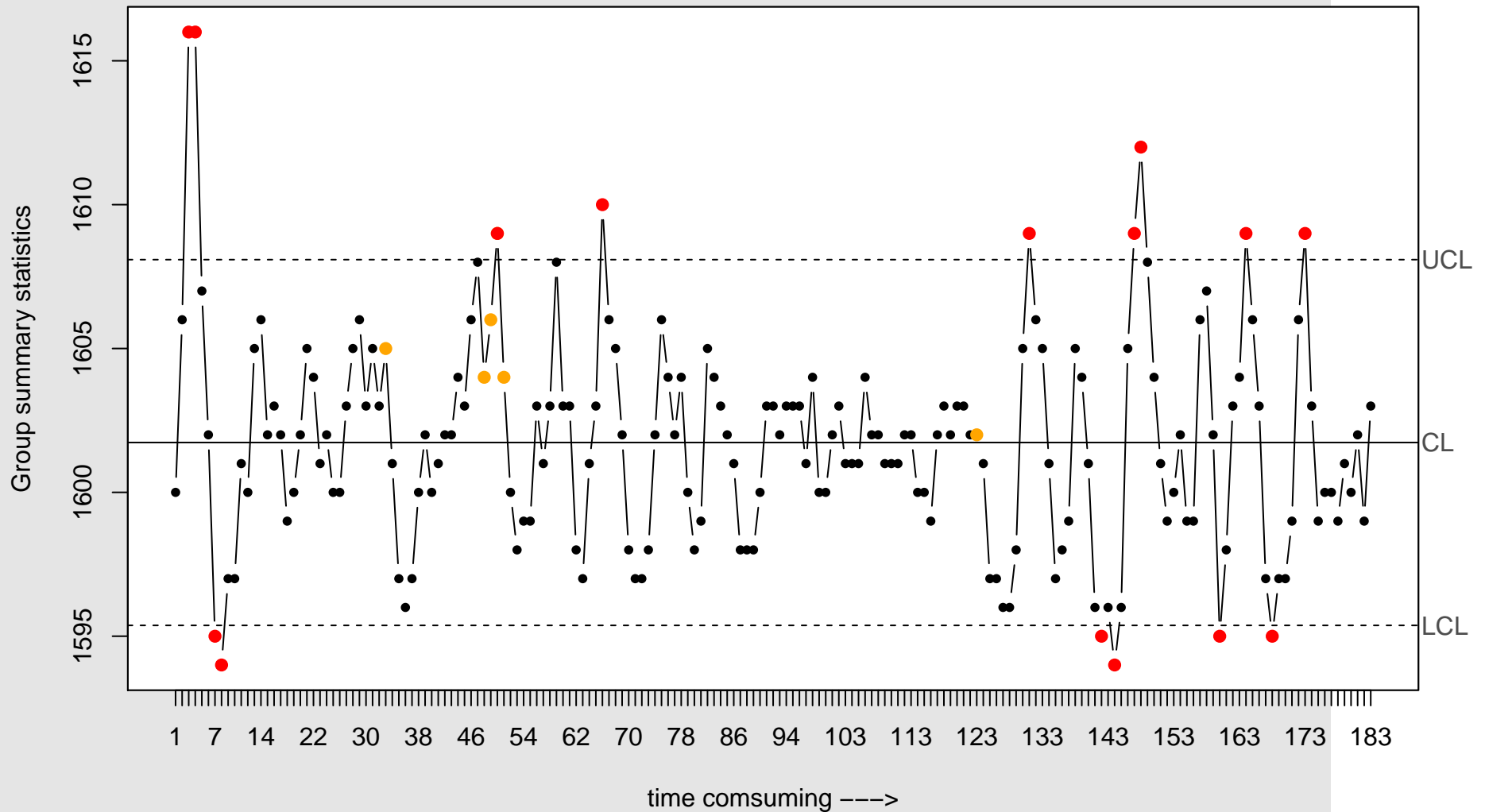
Number of groups = 183
Center = 1601.732
StdDev = 2.118892

LCL = 1595.376
UCL = 1608.089

Number beyond limits = 15
Number violating runs = 6

164th column point of this product

time comsuming ––––>

Number of groups = 183
Center = 1601.415
StdDev = 1.982503

LCL = 1595.468
UCL = 1607.363

Number beyond limits = 15
Number violating runs = 9

165th column point of this product

Group summary statistics

time comsuming ––––>
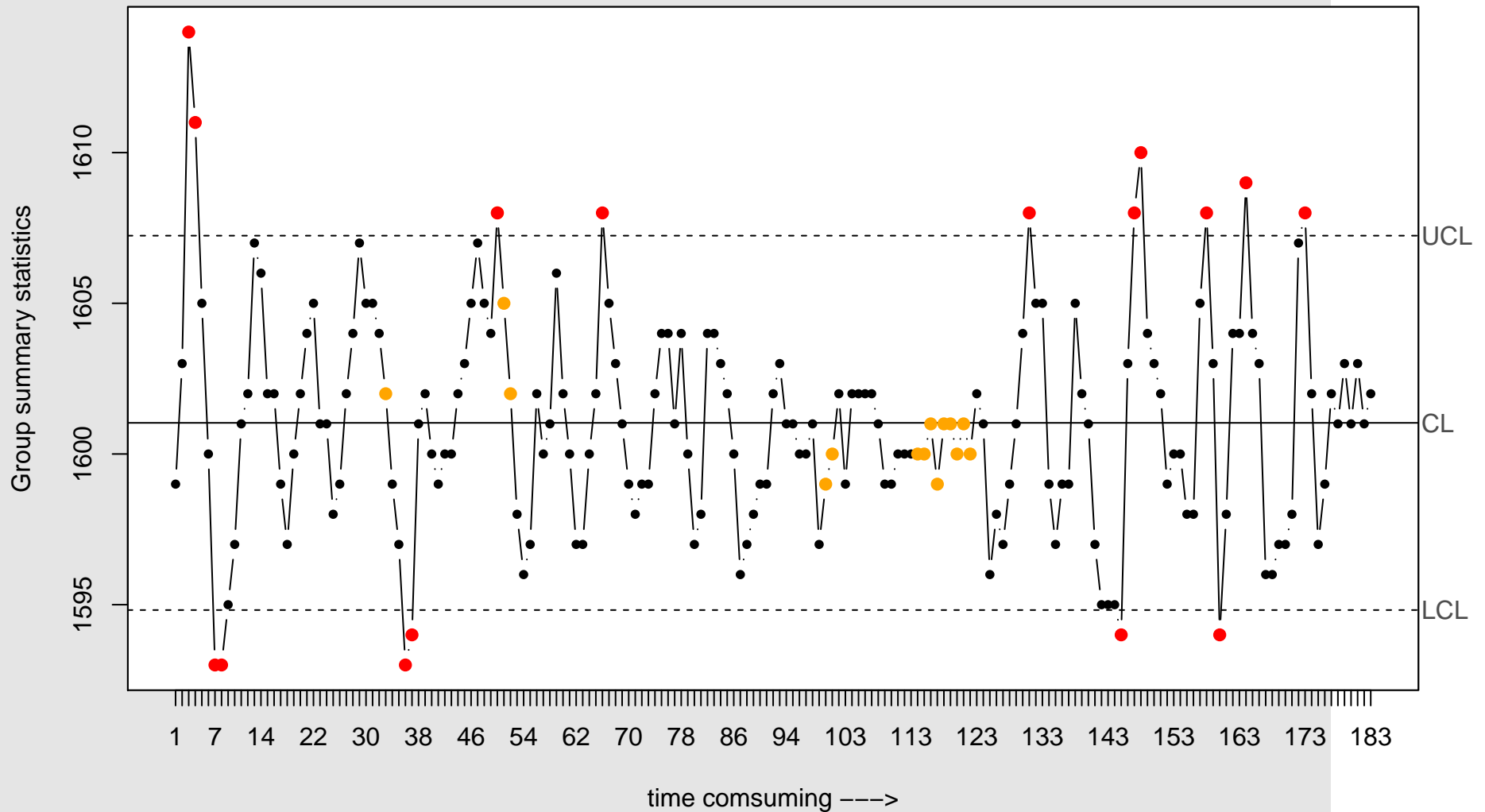
Number of groups = 183
Center = 1601.033
StdDev = 2.070182

LCL = 1594.822
UCL = 1607.243

Number beyond limits = 16
Number violating runs = 15
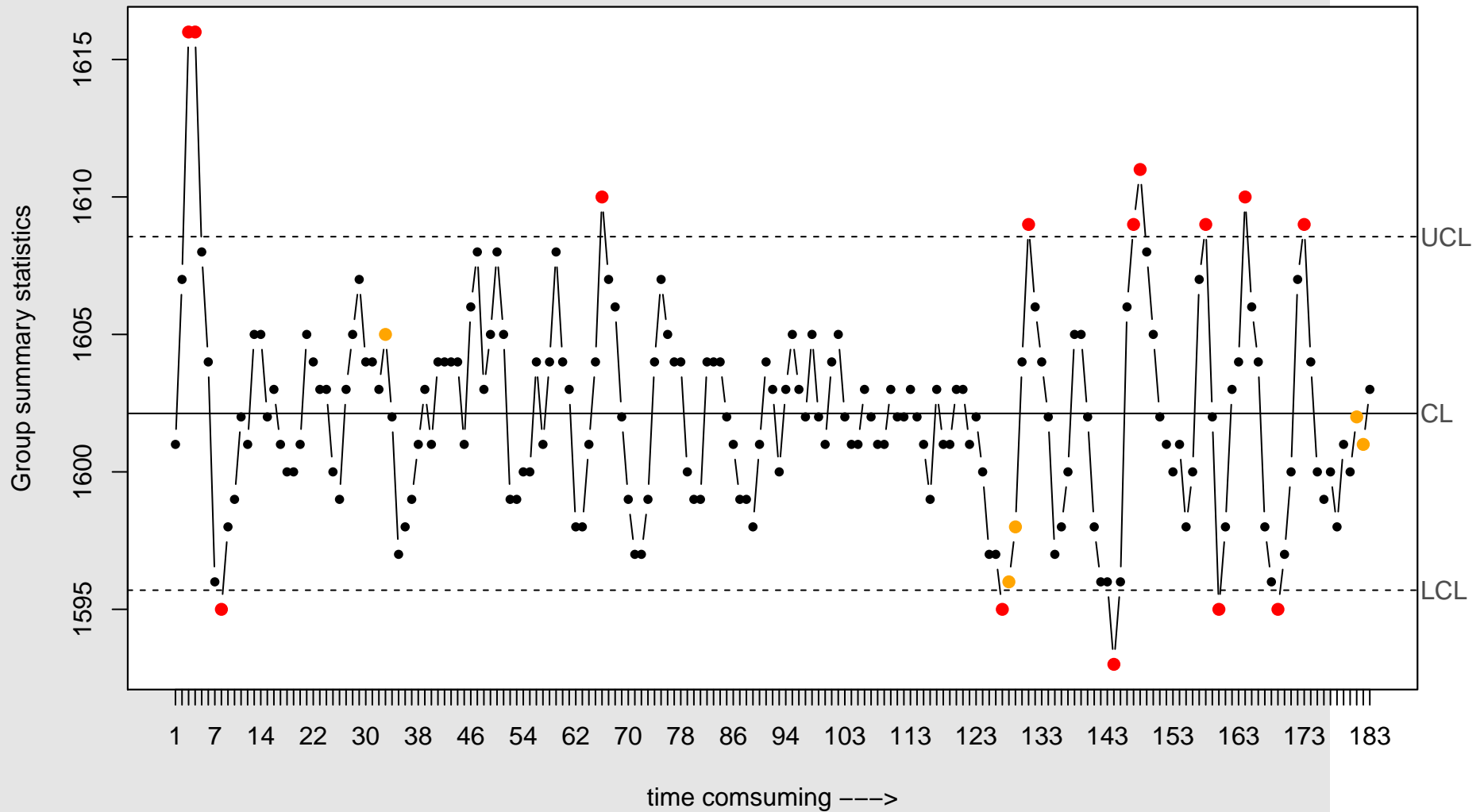
166th column point of this product

Group summary statistics

UCL

CL

LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming –––>
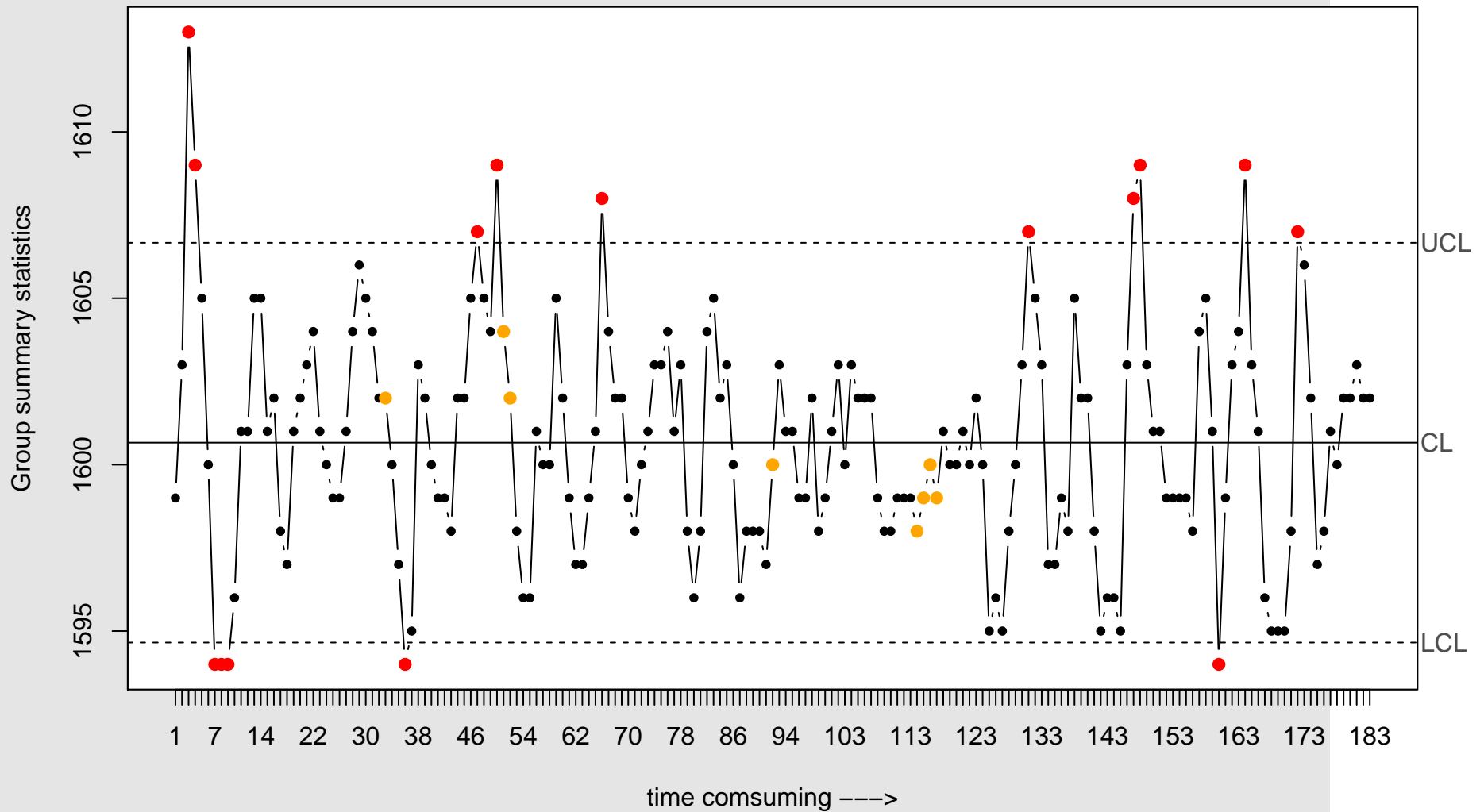
Number of groups = 183
Center = 1600.661   LCL = 1594.655   Number beyond limits = 15
StdDev = 2.001987   UCL = 1606.667   Number violating runs = 9

167th column point of this product

Group summary statistics

time comsuming ---->
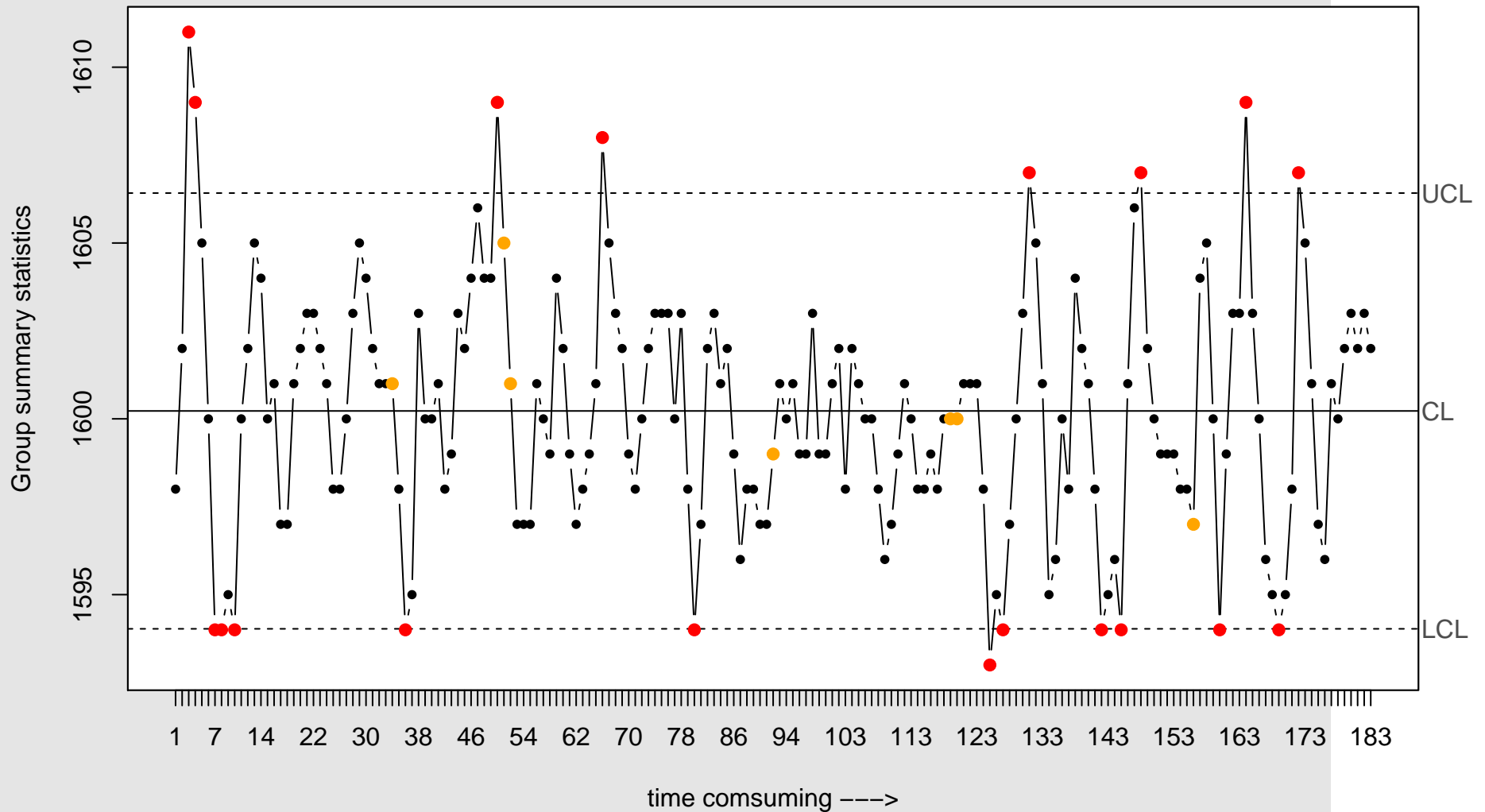
Number of groups = 183
Center = 1600.224
StdDev = 2.065311

LCL = 1594.028
UCL = 1606.42

Number beyond limits = 19
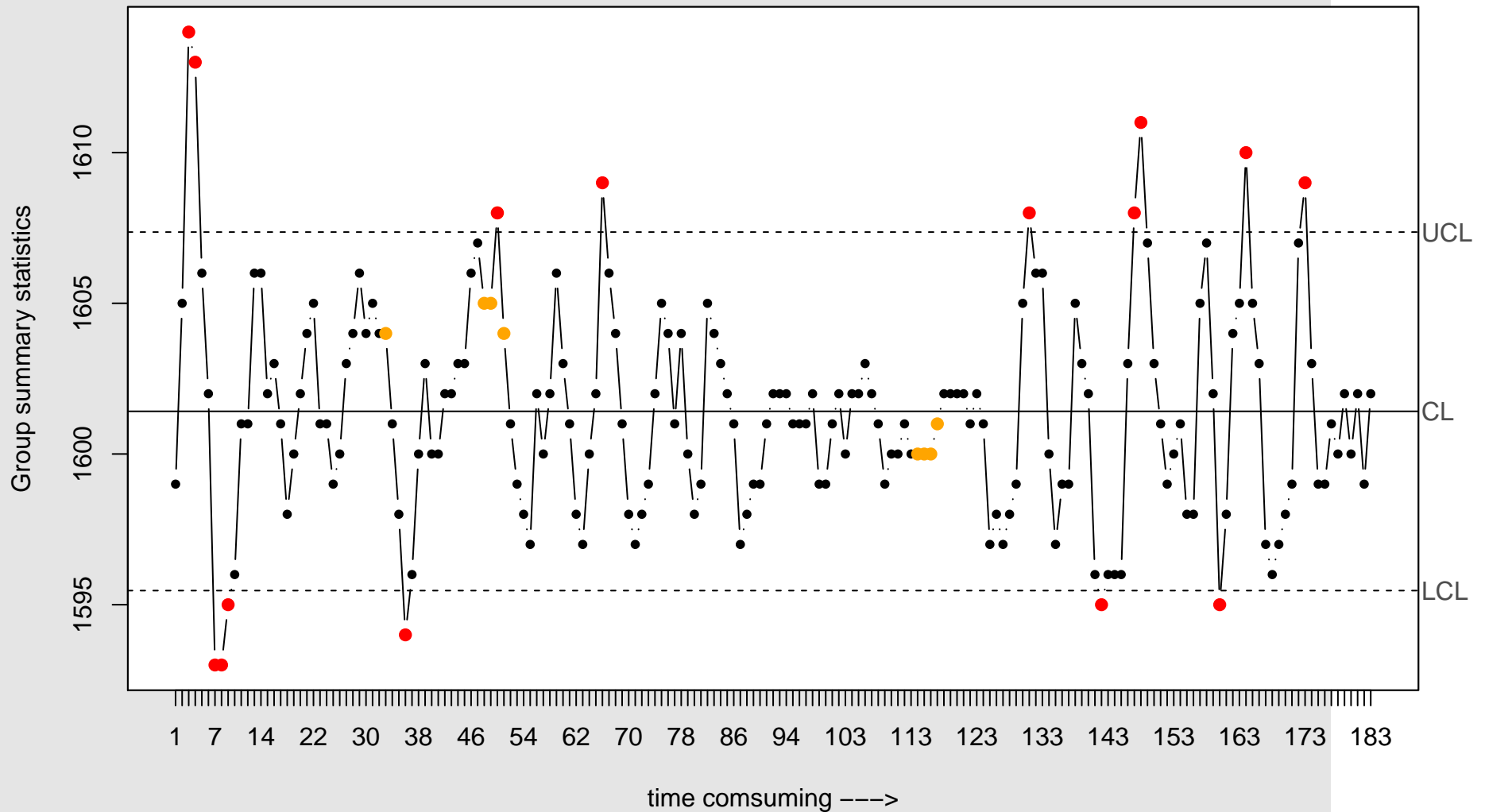Number violating runs = 8

168th column point of this product

Group summary statistics

time comsuming ---->
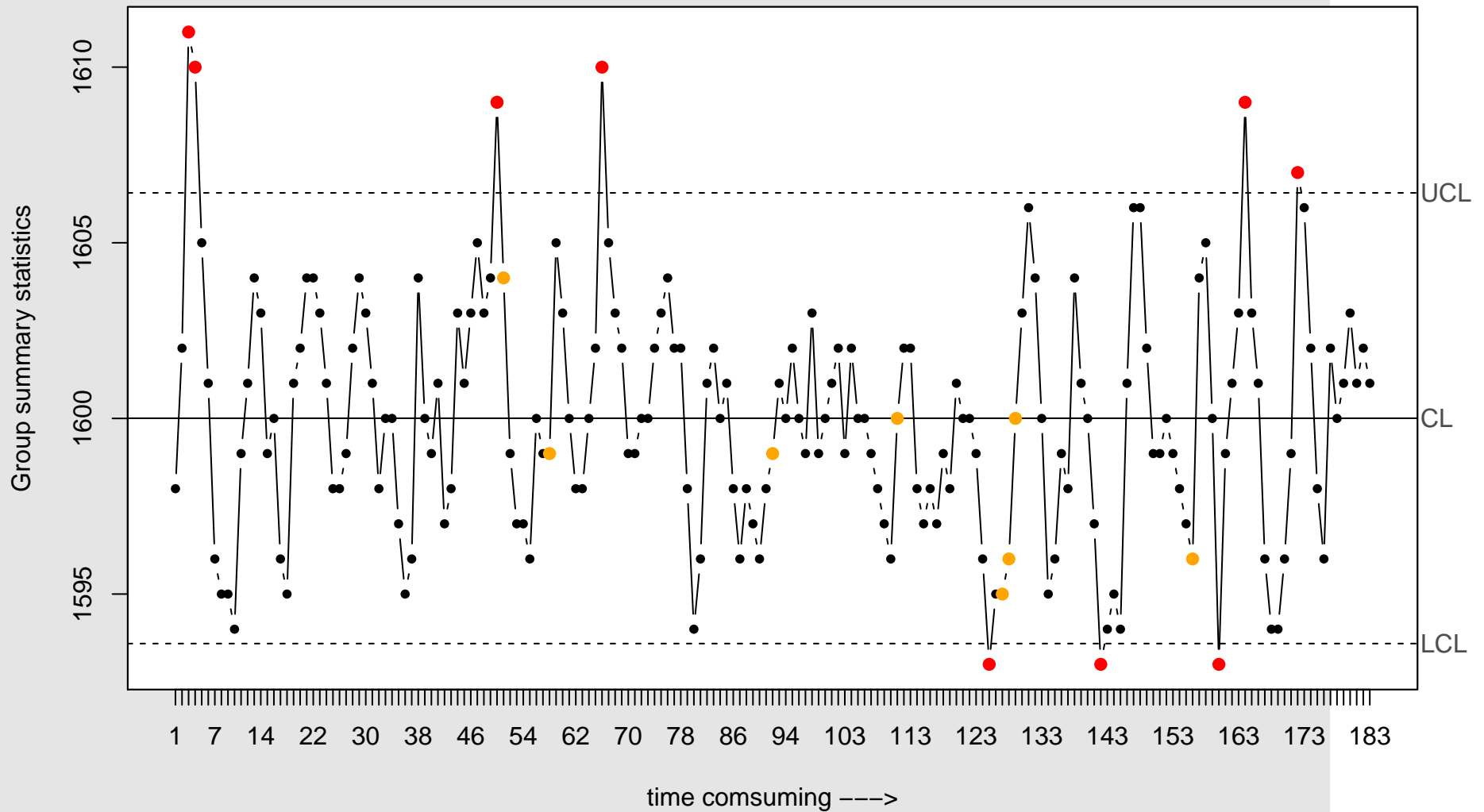
Number of groups = 183
Center = 1600.005
StdDev = 2.138376

LCL = 1593.59
UCL = 1606.421

Number beyond limits = 9
Number violating runs = 9

169th column point of this product

Group summary statistics

time comsuming –––>
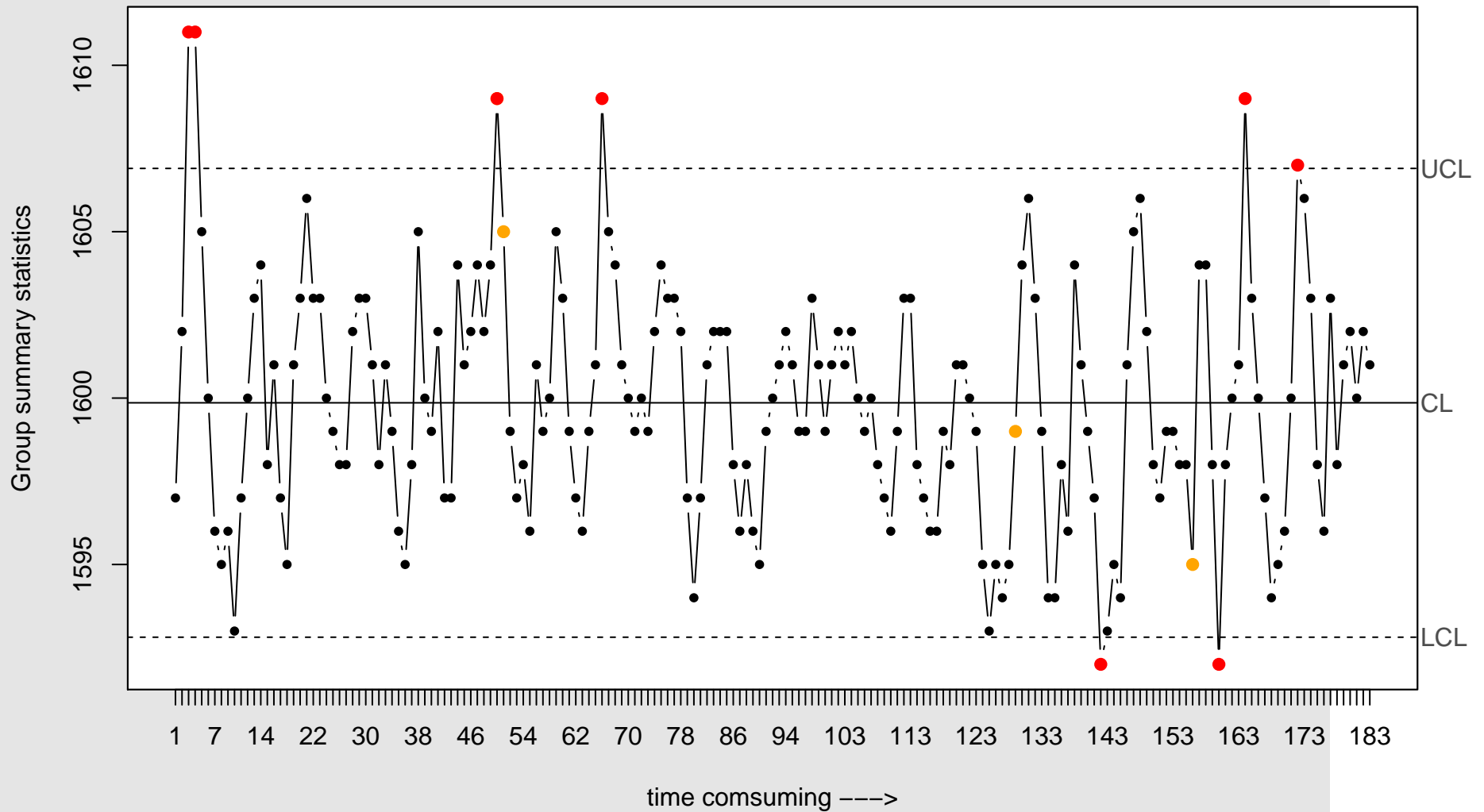
Number of groups = 183
Center = 1599.858
StdDev = 2.347829

LCL = 1592.814
UCL = 1606.901

Number beyond limits = 8
Number violating runs = 4

170th column point of this product

Group summary statistics

time comsuming ---->
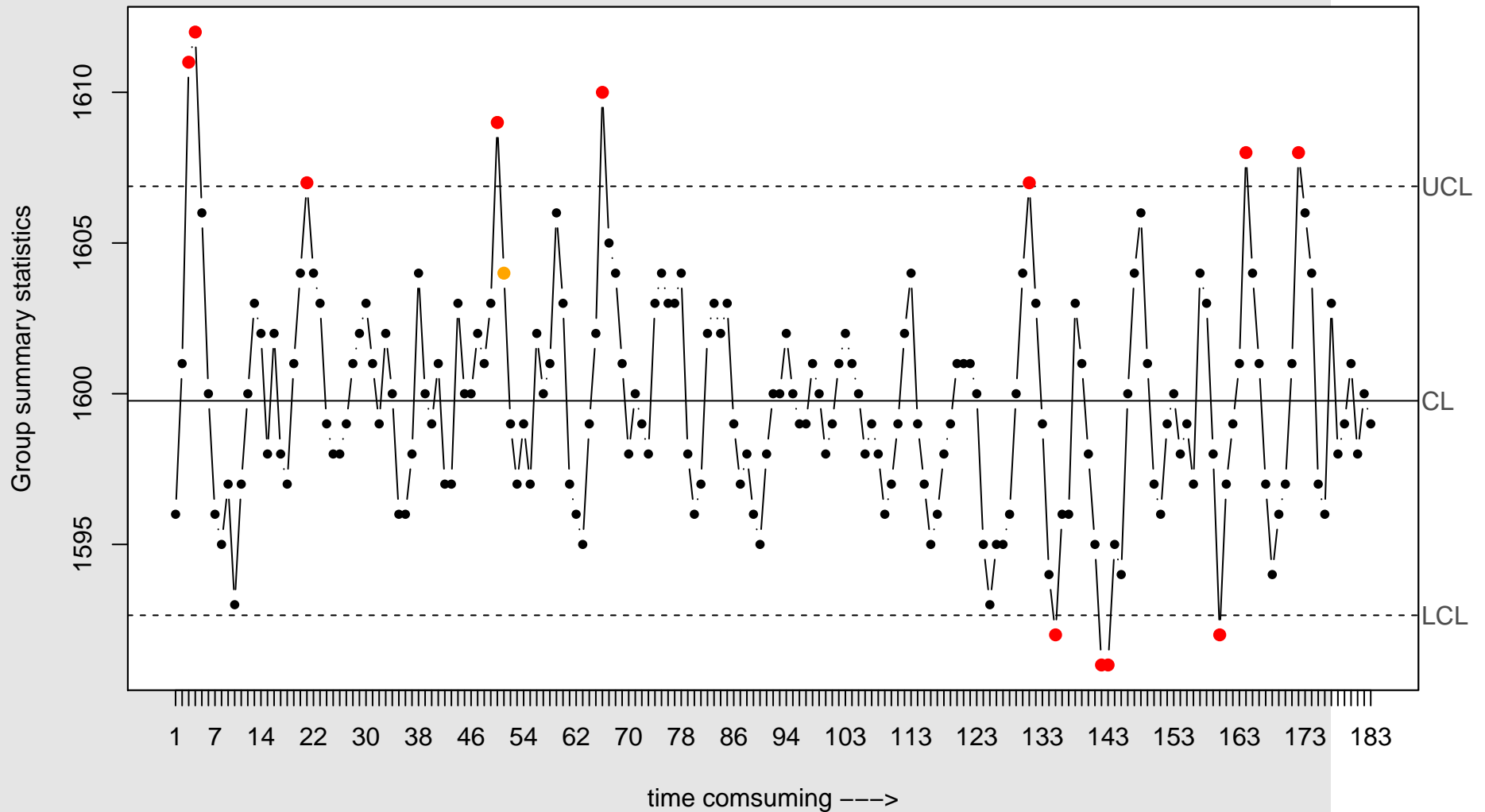
Number of groups = 183
Center = 1599.765
StdDev = 2.372185

LCL = 1592.648
UCL = 1606.882

Number beyond limits = 12
Number violating runs = 2

171th column point of this product

Group summary statistics

time comsuming ---->
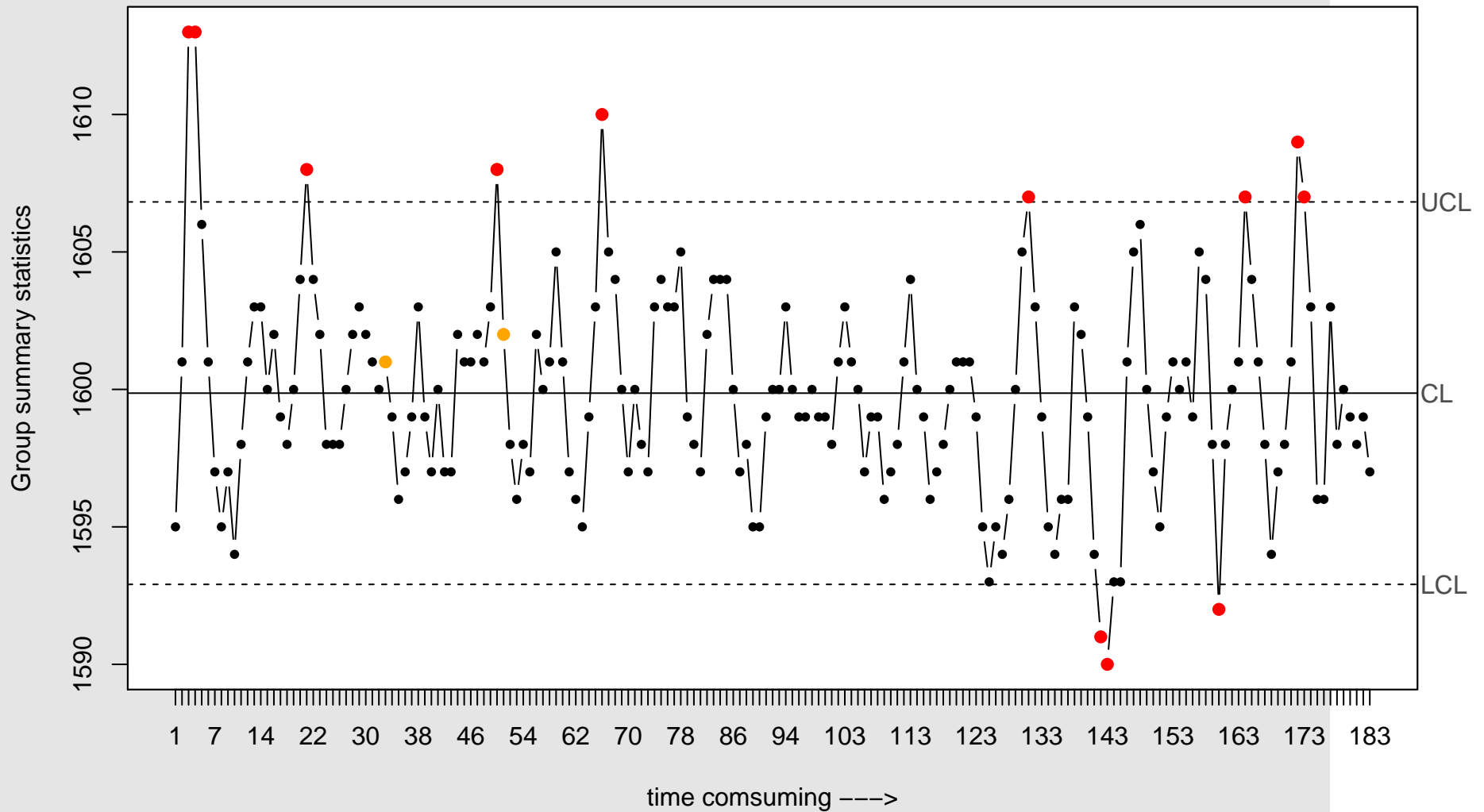
Number of groups = 183
Center = 1599.863
StdDev = 2.318603

LCL = 1592.908
UCL = 1606.819

Number beyond limits = 12
Number violating runs = 3

172th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1599.967   LCL = 1593.128   Number beyond limits = 15
StdDev = 2.279635   UCL = 1606.806   Number violating runs = 4

173th column point of this product

Group summary statistics

time comsuming ---->
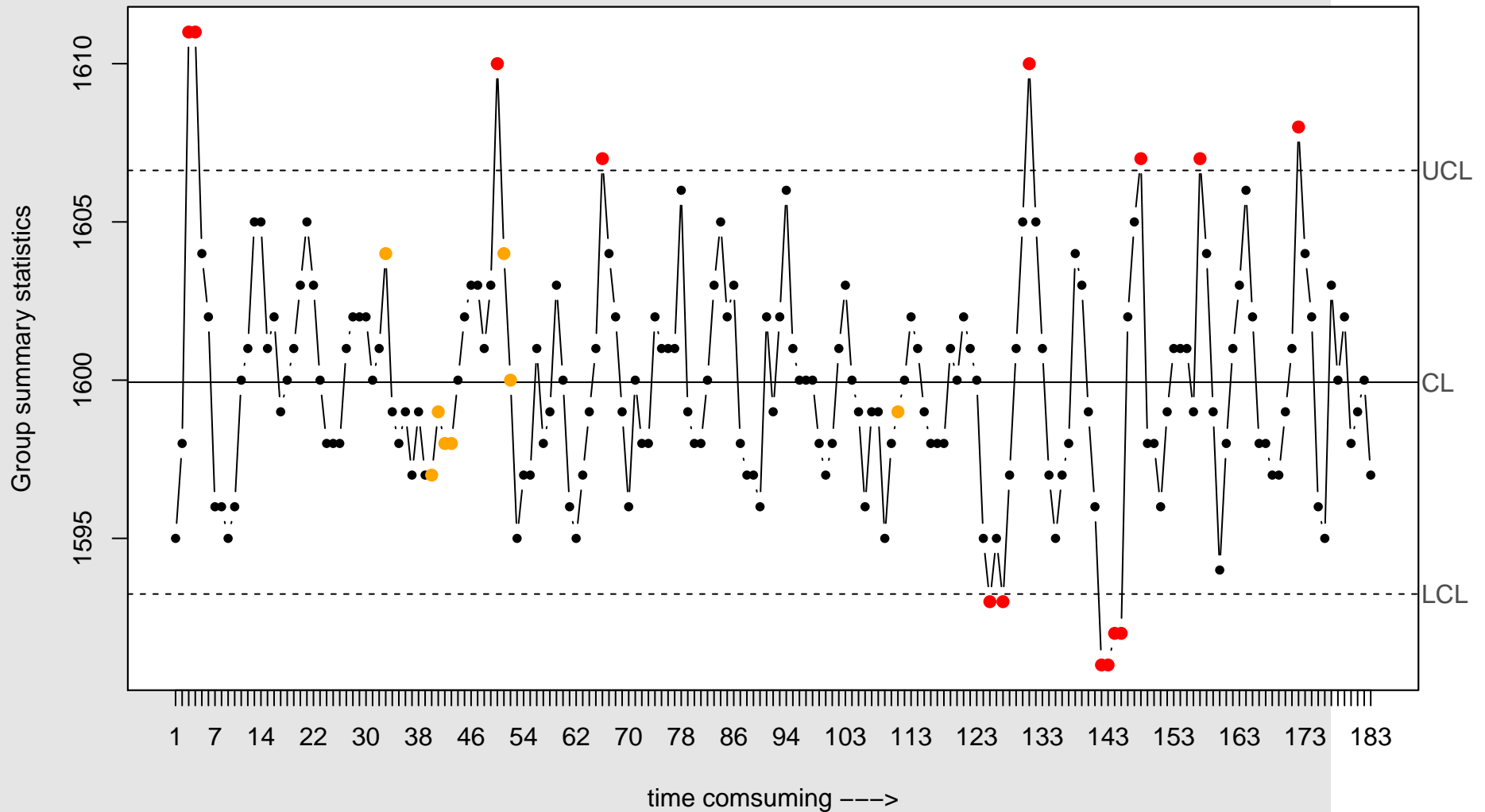
Number of groups = 183
Center = 1599.934
StdDev = 2.230925

LCL = 1593.242
UCL = 1606.627

Number beyond limits = 14
Number violating runs = 9

174th column point of this product

Group summary statistics

time comsuming ----->

Number of groups = 183
Center = 1599.836   LCL = 1593.611   Number beyond limits = 12
StdDev = 2.075053   UCL = 1606.061   Number violating runs = 9

175th column point of this product

Group summary statistics

time comsuming ––––>
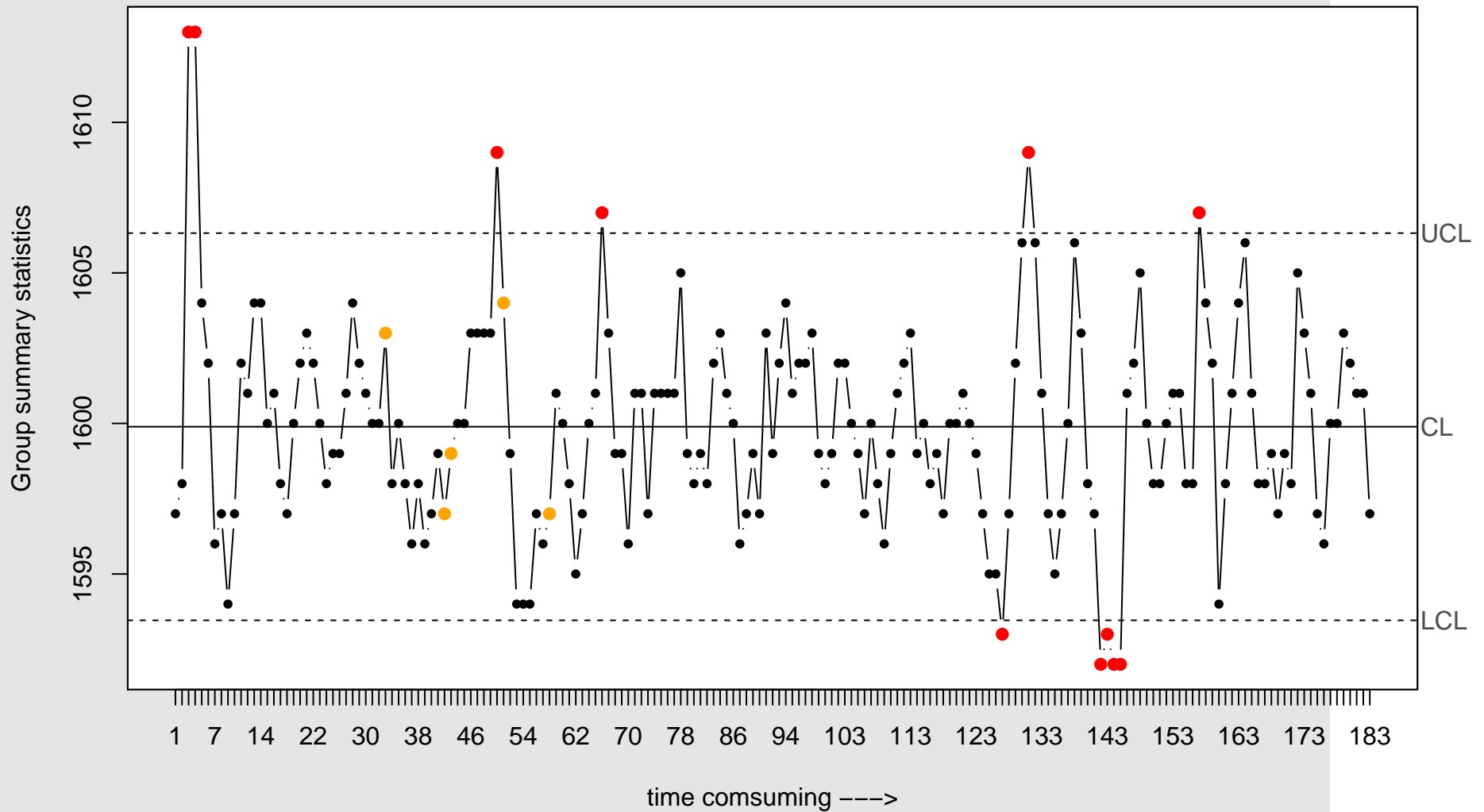
Number of groups = 183
Center = 1599.891
StdDev = 2.143247

LCL = 1593.461
UCL = 1606.32

Number beyond limits = 11
Number violating runs = 6

176th column point of this product

Group summary statistics

time comsuming ––––>
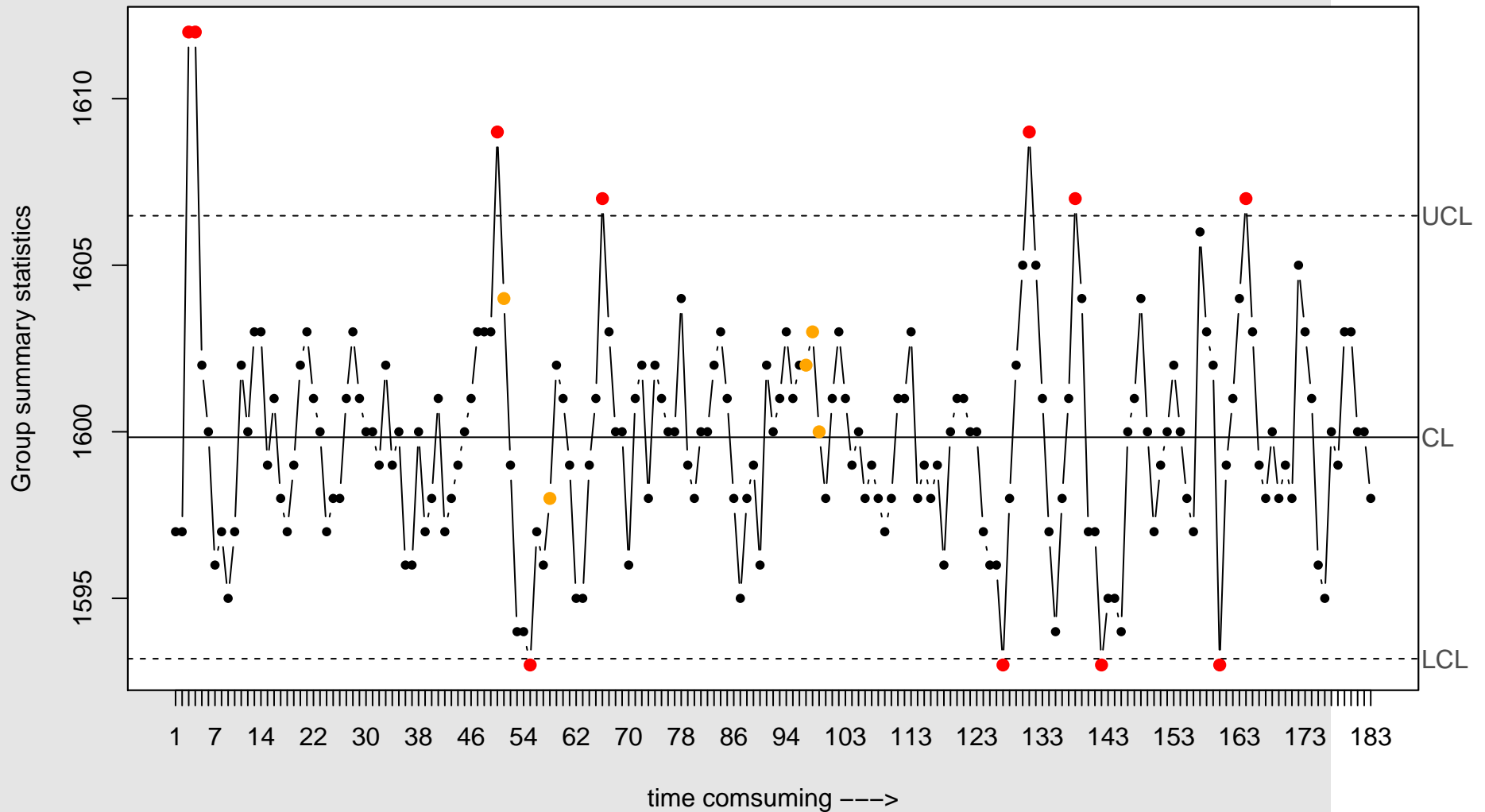
Number of groups = 183
Center = 1599.836
StdDev = 2.216312
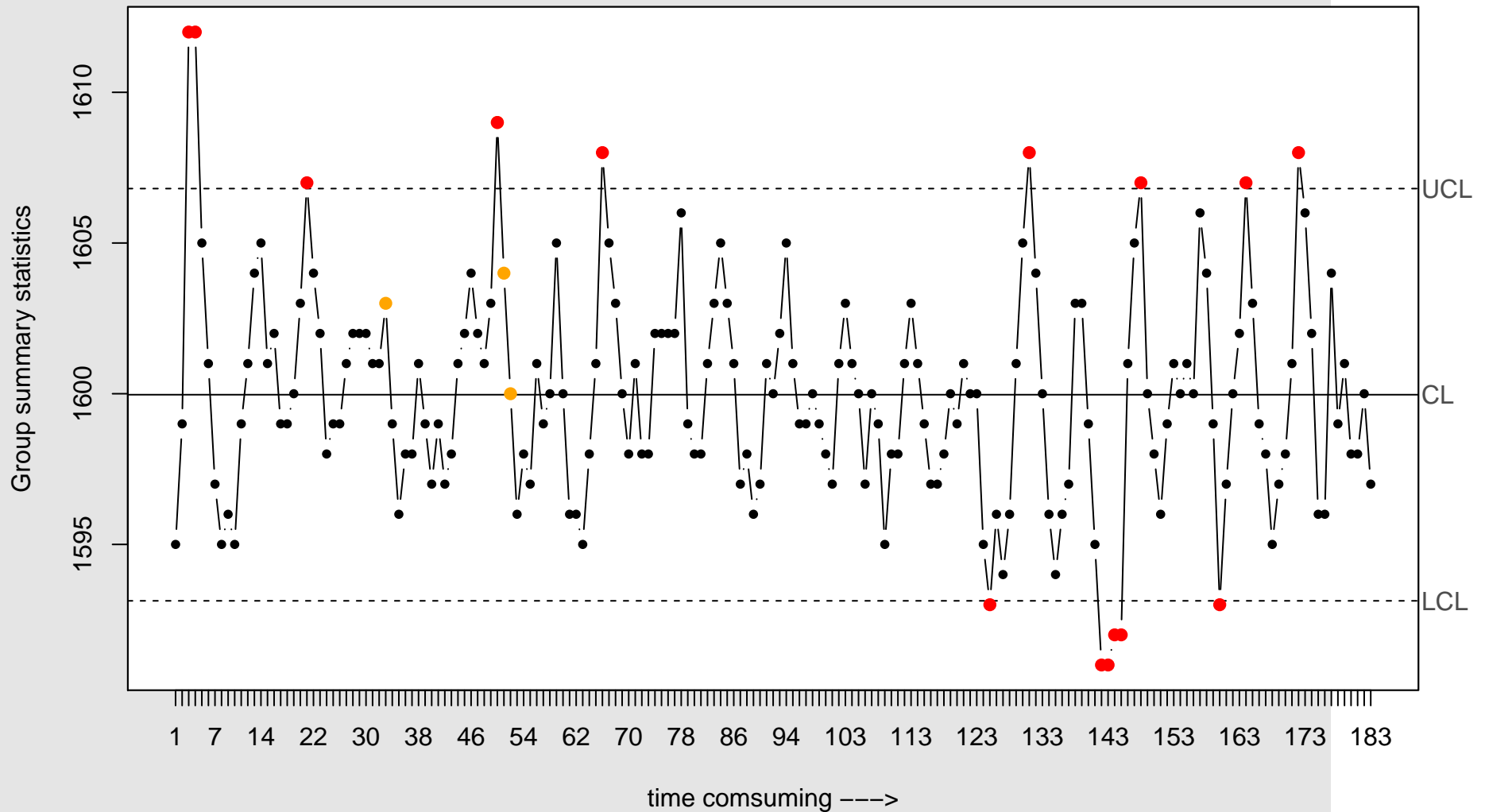
LCL = 1593.187
UCL = 1606.485

Number beyond limits = 11
Number violating runs = 5

177th column point of this product

Group summary statistics

time comsuming --->
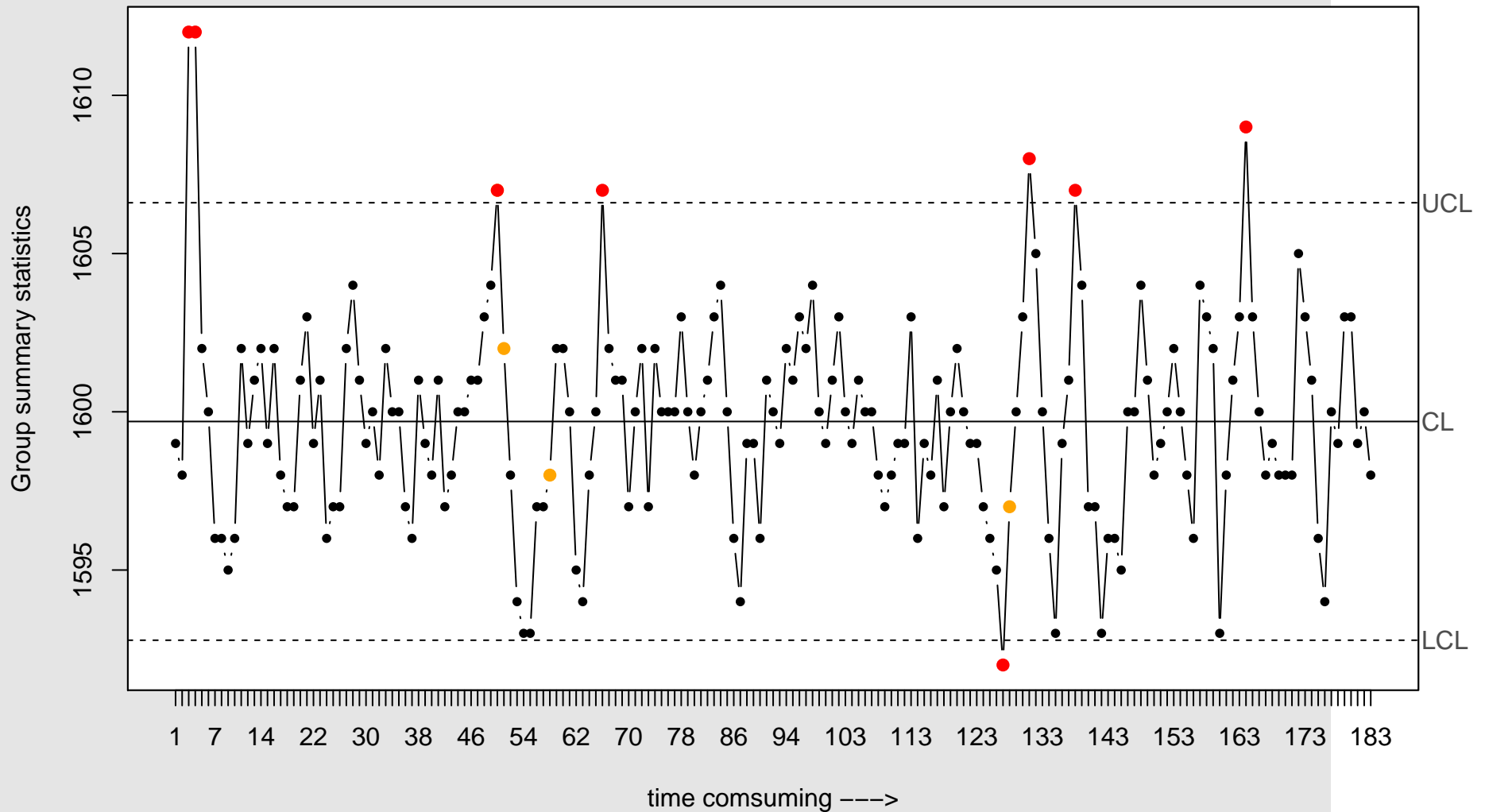
Number of groups = 183
Center = 1599.694
StdDev = 2.30399

LCL = 1592.782
UCL = 1606.606

Number beyond limits = 8
Number violating runs = 4

178th column point of this product

Group summary statistics

time comsuming ---->
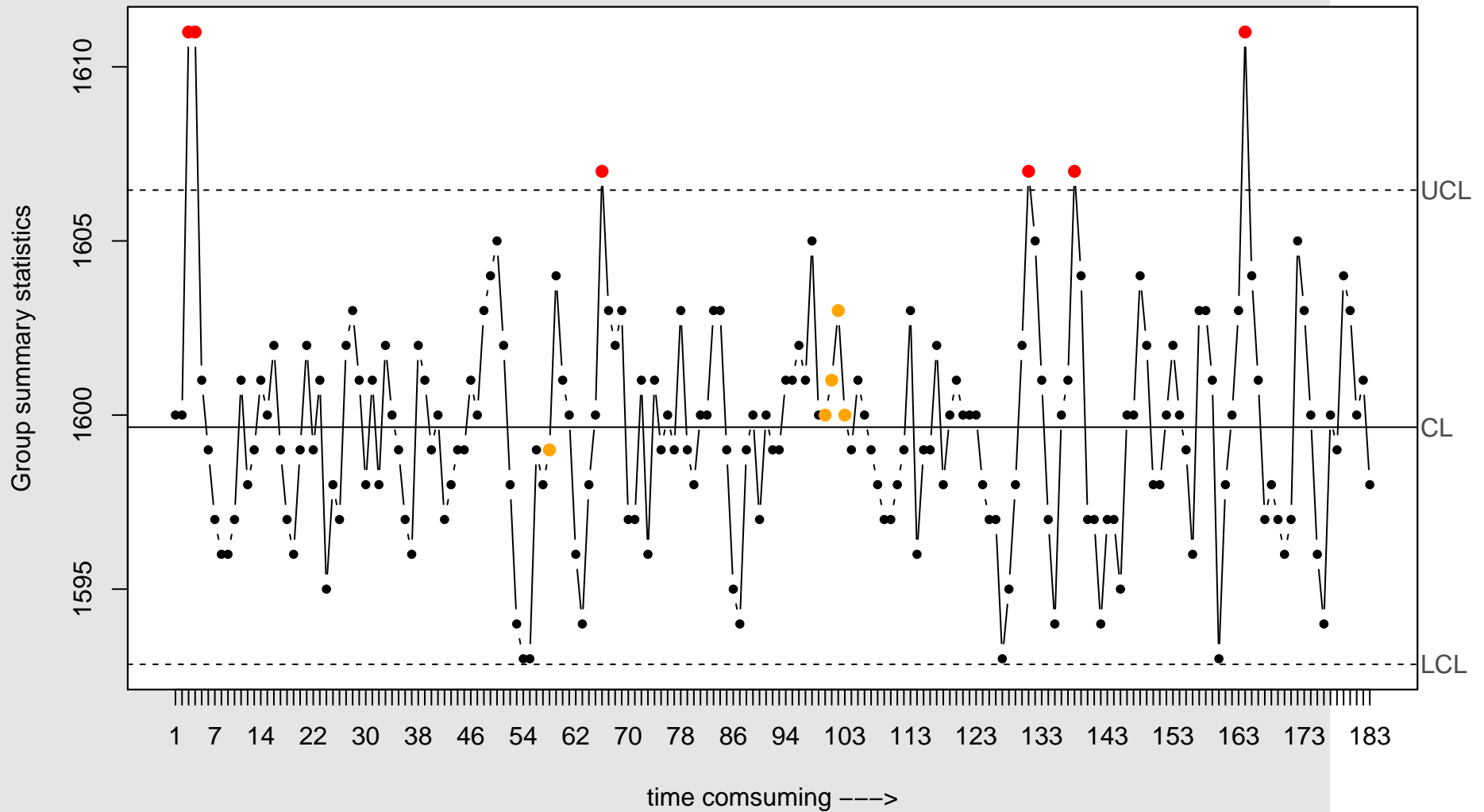
Number of groups = 183
Center = 1599.65
StdDev = 2.269893

LCL = 1592.841
UCL = 1606.46

Number beyond limits = 6
Number violating runs = 5

179th column point of this product

Group summary statistics

time comsuming ---->
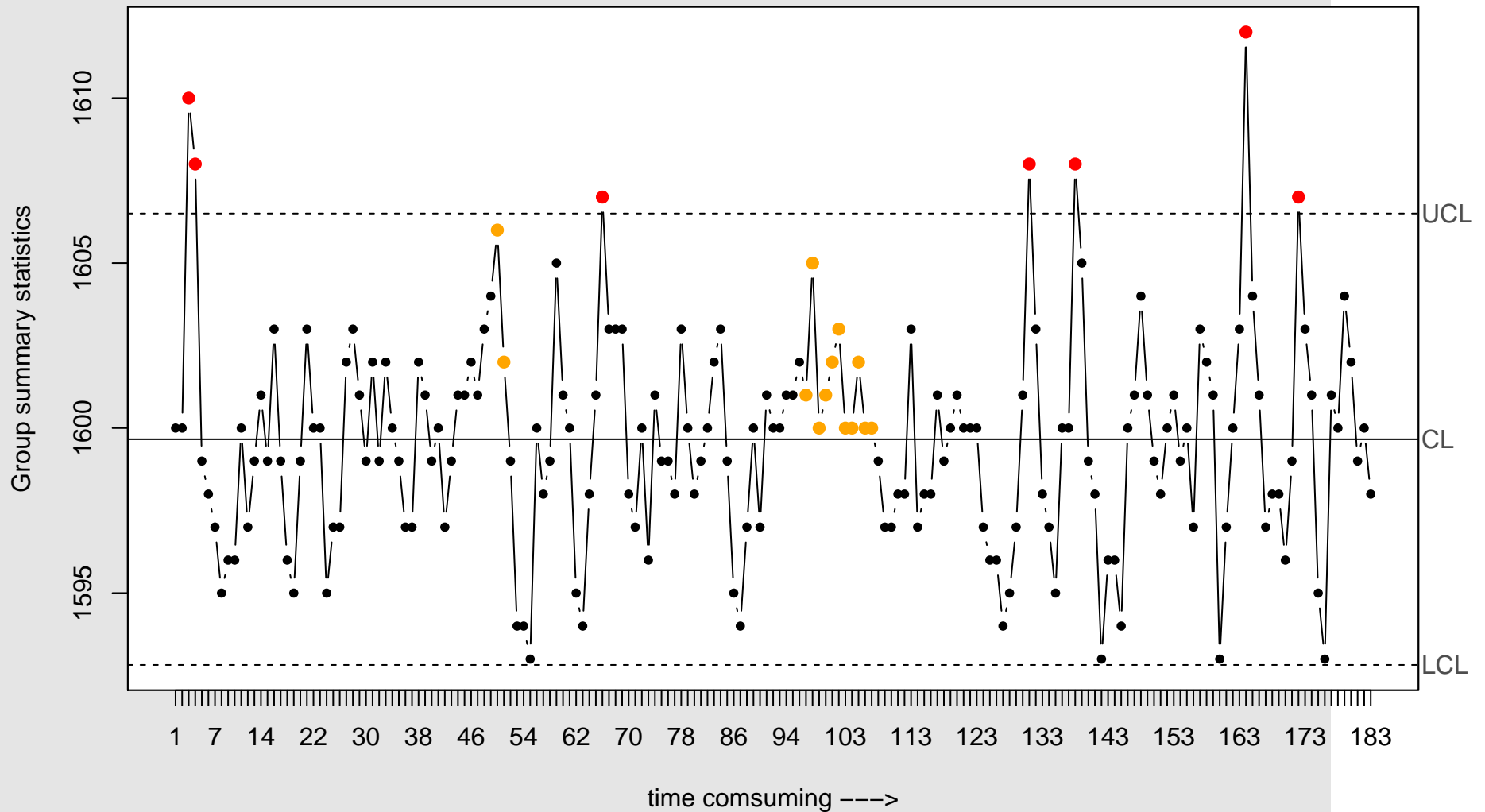
Number of groups = 183
Center = 1599.661
StdDev = 2.279635

LCL = 1592.822
UCL = 1606.5

Number beyond limits = 7
Number violating runs = 13

180th column point of this product

Group summary statistics

time comsuming ---->
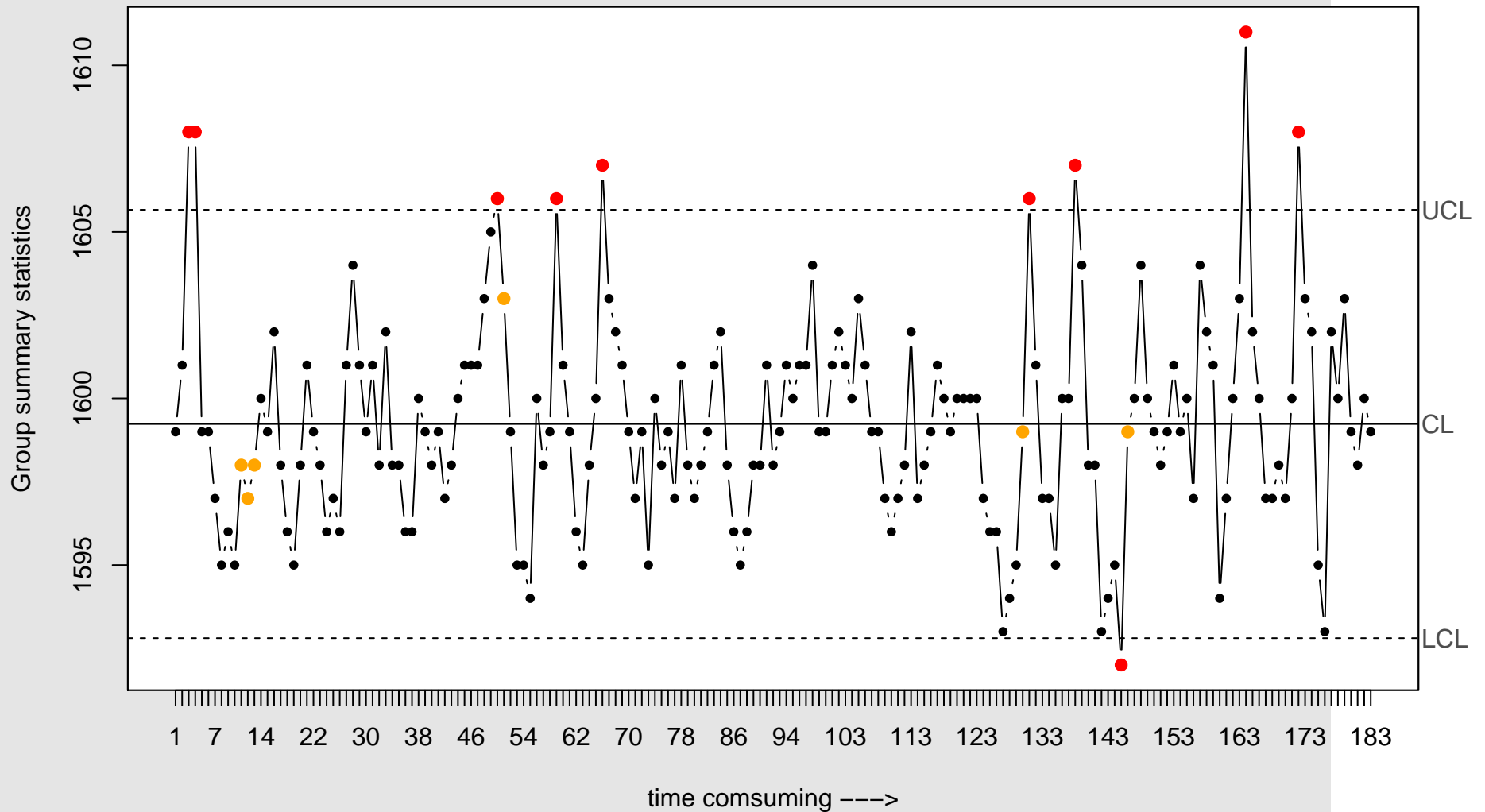
Number of groups = 183
Center = 1599.235   LCL = 1592.805   Number beyond limits = 10
StdDev = 2.143247   UCL = 1605.665   Number violating runs = 7

181th column point of this product

Group summary statistics

time comsuming ---->
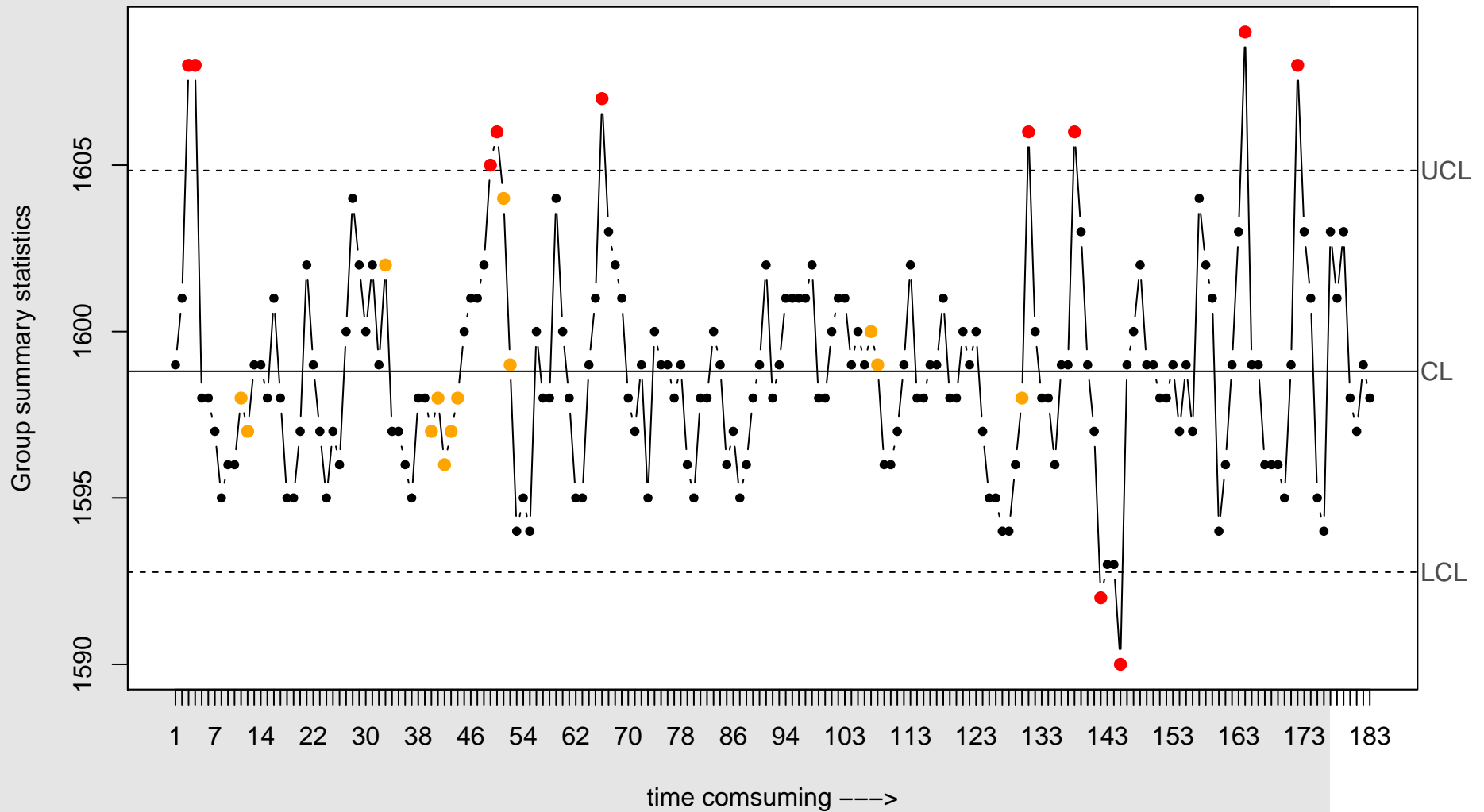
Number of groups = 183
Center = 1598.803
StdDev = 2.011729

LCL = 1592.768
UCL = 1604.838

Number beyond limits = 11
Number violating runs = 13

182th column point of this product

Group summary statistics

time comsuming ––––>
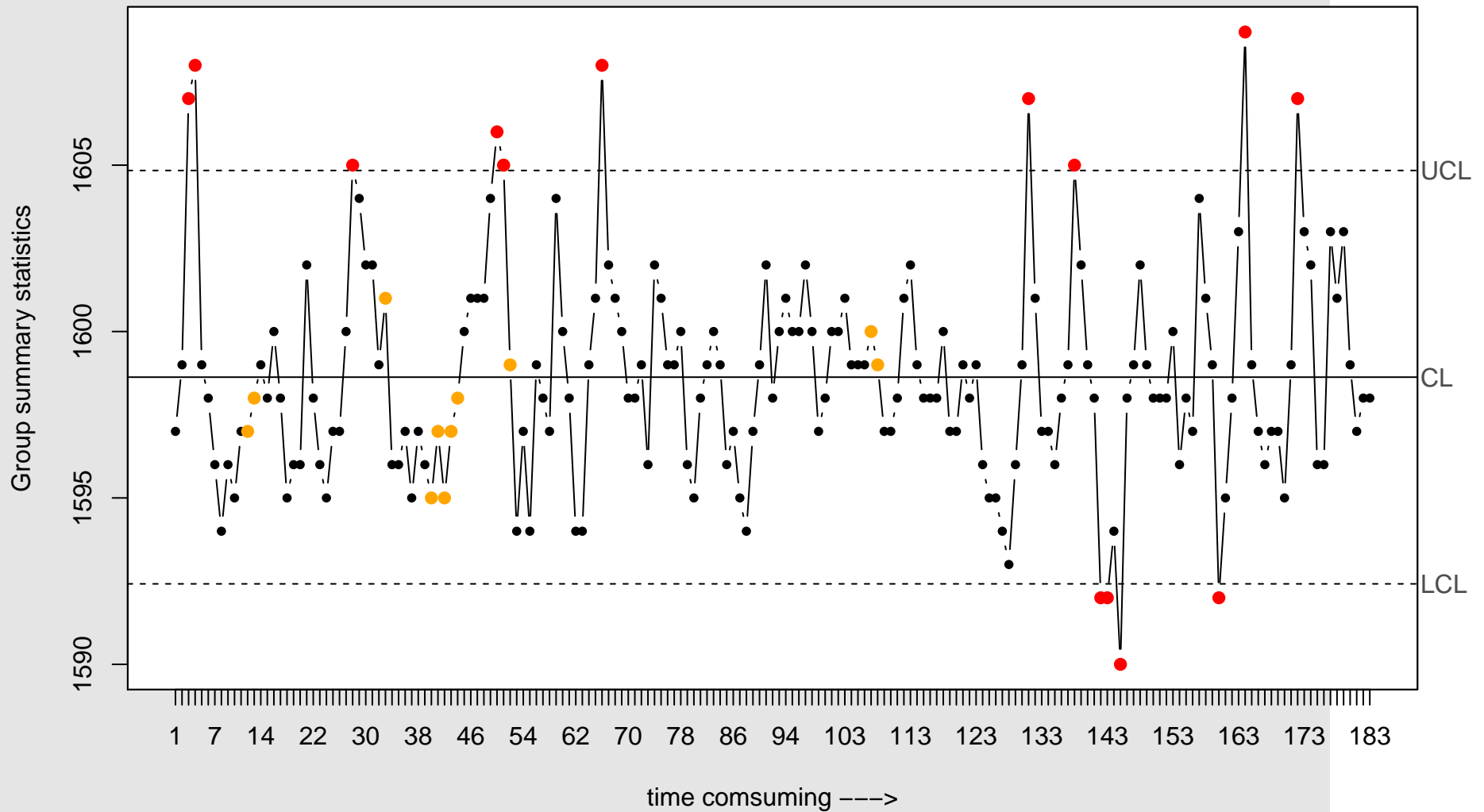
Number of groups = 183
Center = 1598.628
StdDev = 2.070182

LCL = 1592.418
UCL = 1604.839

Number beyond limits = 14
Number violating runs = 12

183th column point of this product

Group summary statistics

time comsuming –––>

UCL
CL
LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183
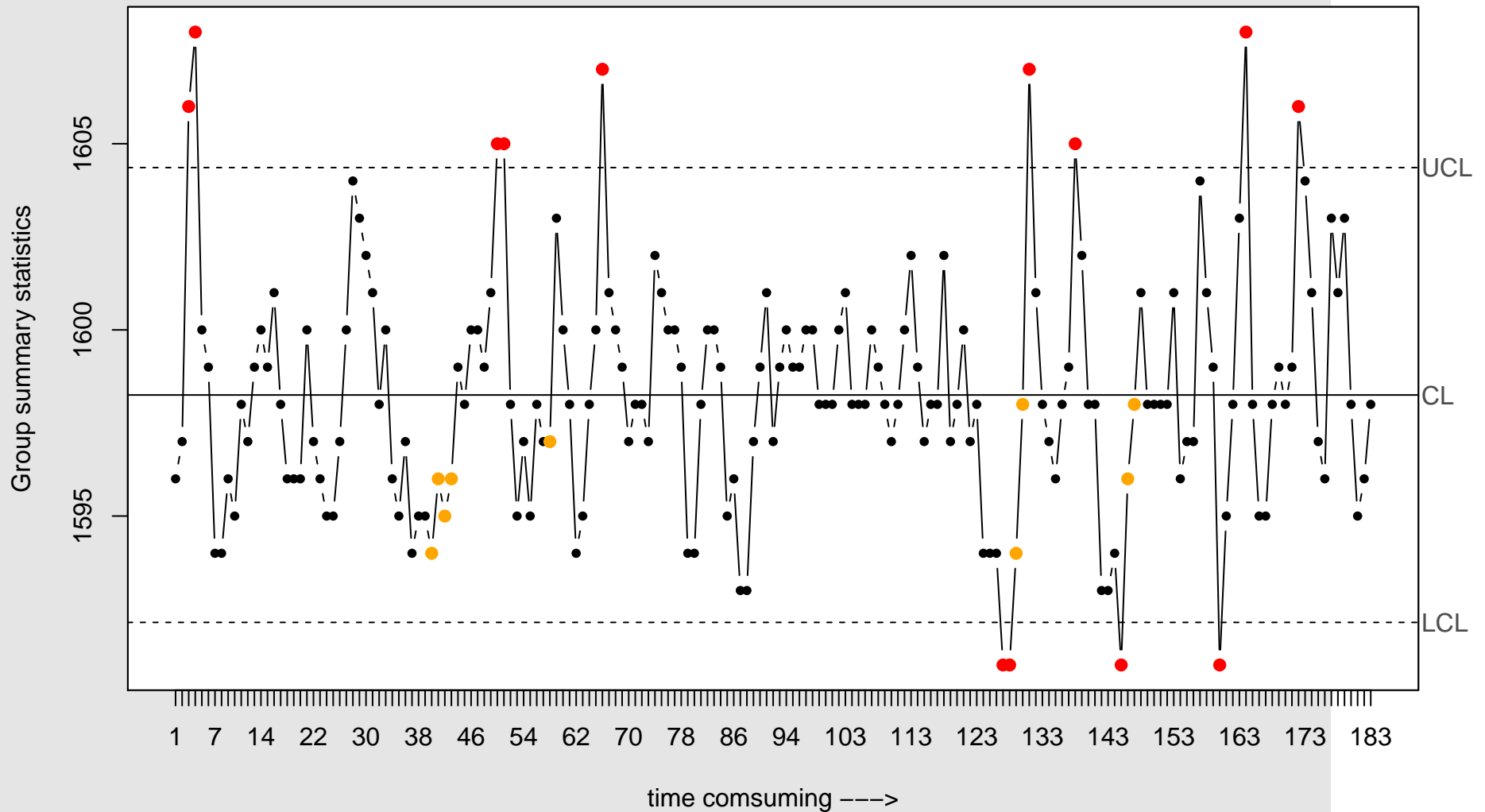
Number of groups = 183
Center = 1598.251
StdDev = 2.036084

LCL = 1592.143
UCL = 1604.36

Number beyond limits = 13
Number violating runs = 10

184th column point of this product

Group summary statistics

UCL

CL

LCL

1605

1600

1595

1590

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming –––>
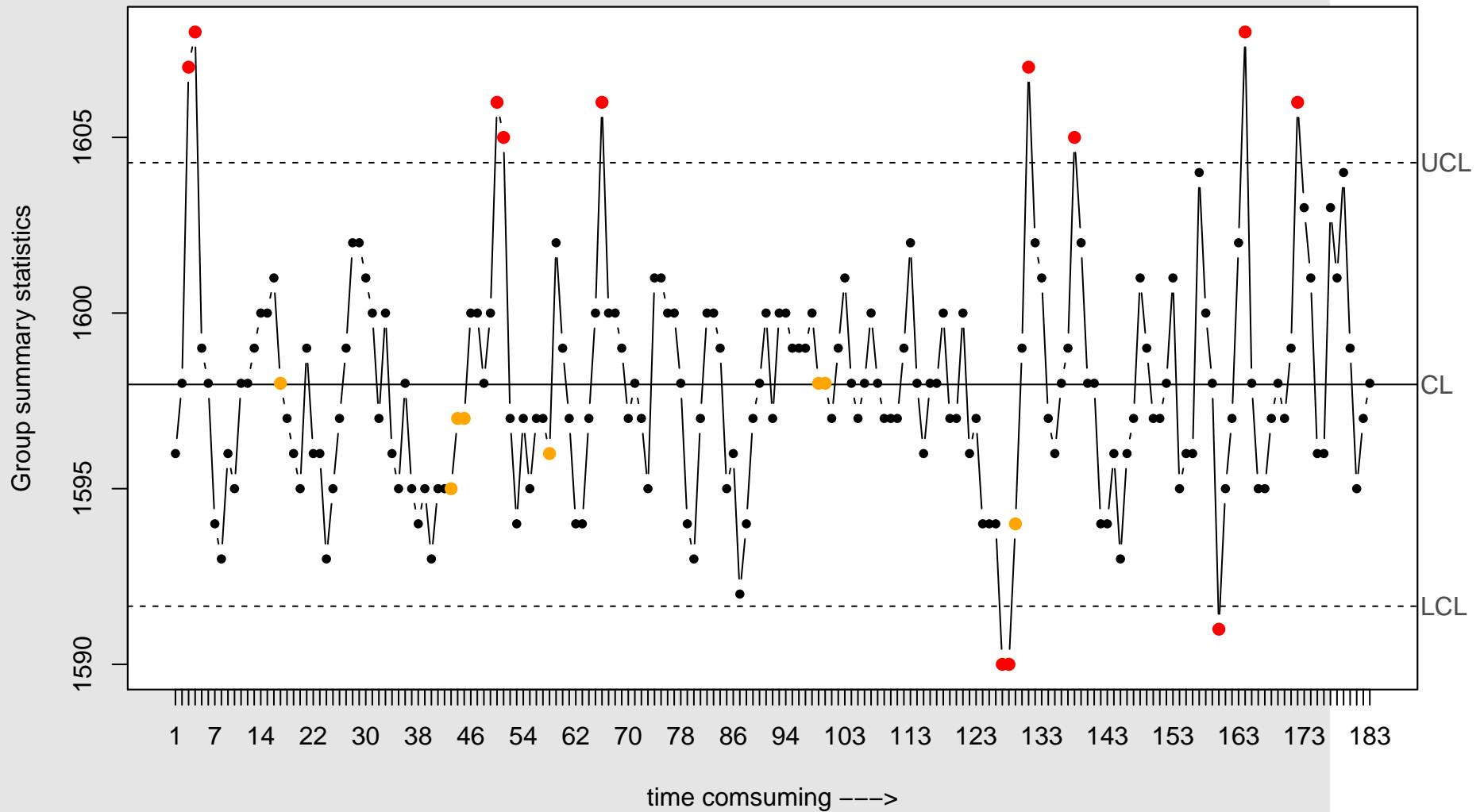
Number of groups = 183
Center = 1597.967   LCL = 1591.654   Number beyond limits = 12
StdDev = 2.104279   UCL = 1604.28   Number violating runs = 9

185th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1597.727
StdDev = 2.240667

LCL = 1591.005
UCL = 1604.449

Number beyond limits = 13
Number violating runs = 9

186th column point of this product

Group summary statistics

time comsuming –––>

Number of groups = 183
Center = 1597.552
StdDev = 2.260151

LCL = 1590.771
UCL = 1604.332

Number beyond limits = 9
Number violating runs = 7

187th column point of this product

Group summary statistics

1605

1600

1595

1590

UCL

CL

LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ––––>
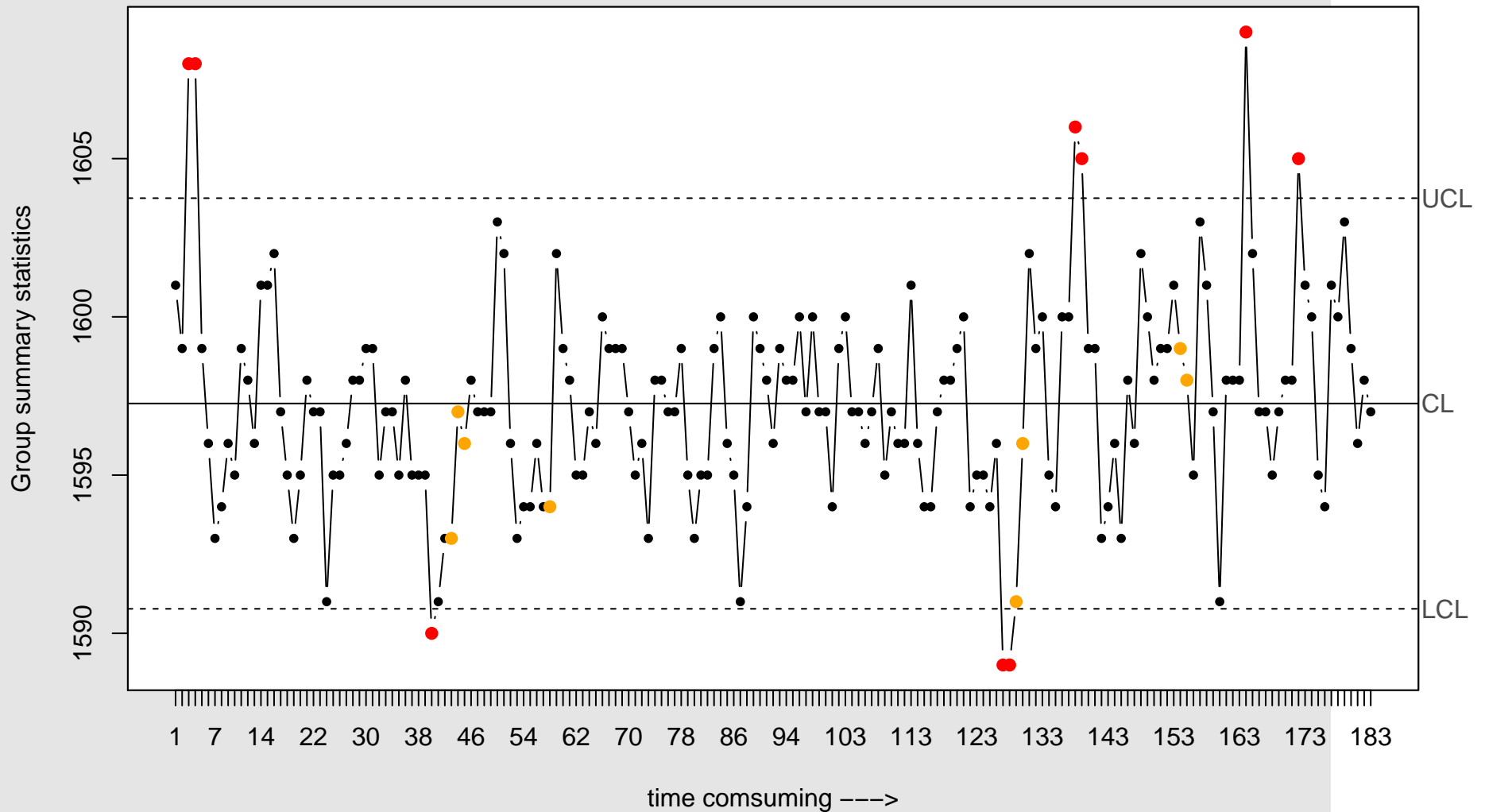
Number of groups = 183
Center = 1597.262   LCL = 1590.774   Number beyond limits = 9
StdDev = 2.162731   UCL = 1603.75   Number violating runs = 9

188th column point of this product

Number of groups = 183
Center = 1596.869   LCL = 1590.161   Number beyond limits = 9
StdDev = 2.235796   UCL = 1603.576   Number violating runs = 11

189th column point of this product

Group summary statistics

time comsuming ---->
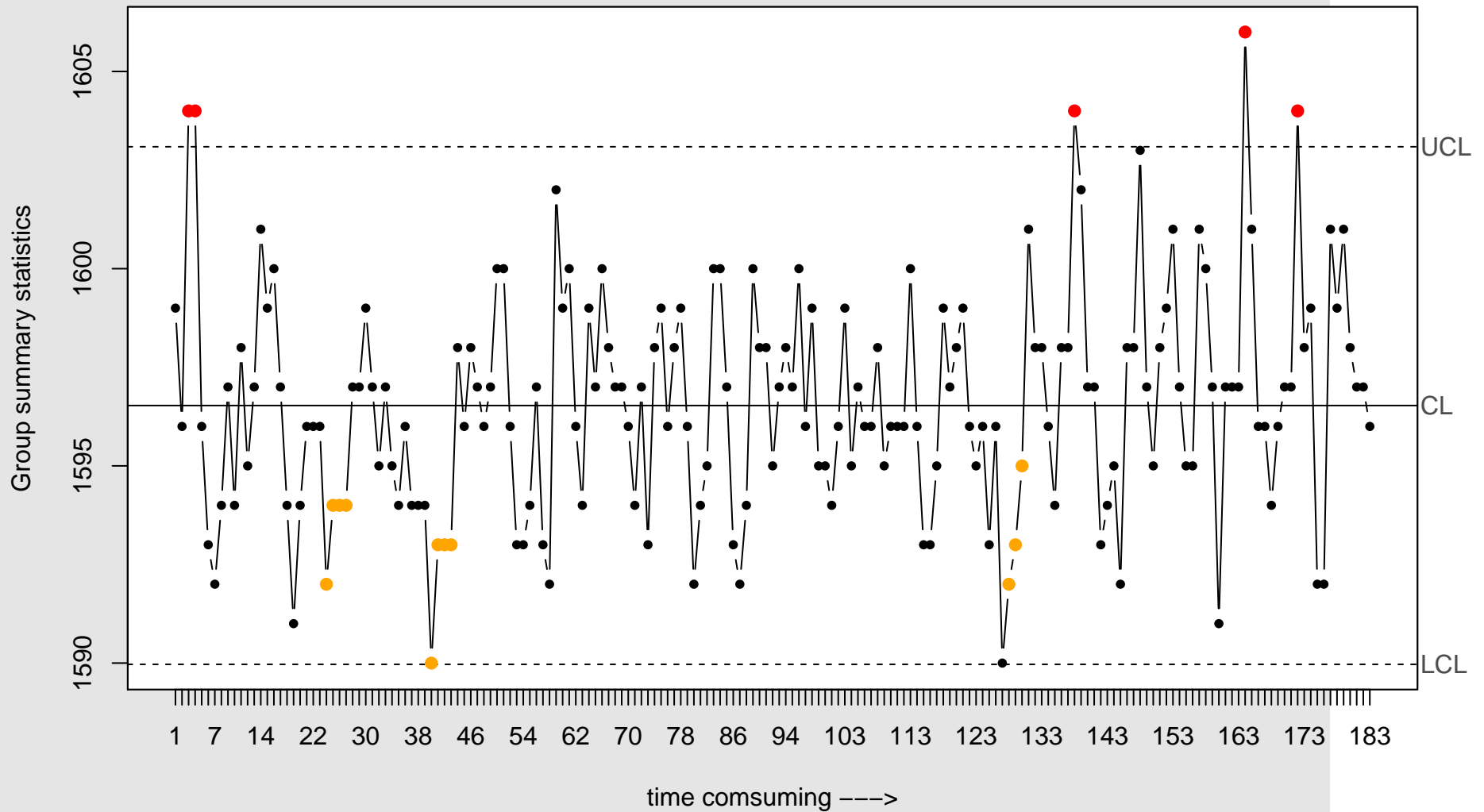
Number of groups = 183
Center = 1596.53
StdDev = 2.187086

LCL = 1589.969
UCL = 1603.091

Number beyond limits = 5
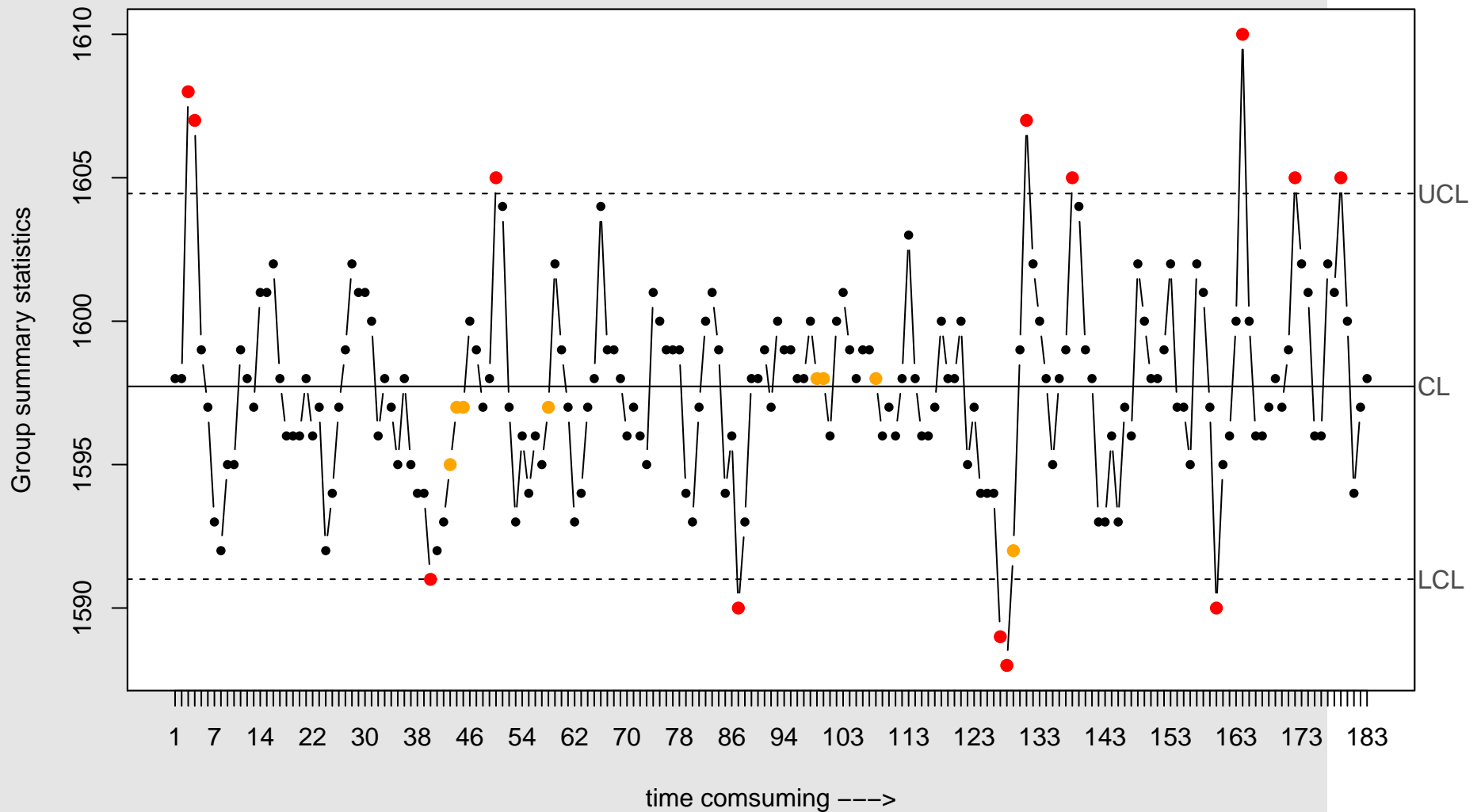Number violating runs = 11

190th column point of this product

Group summary statistics

time comsuming --->
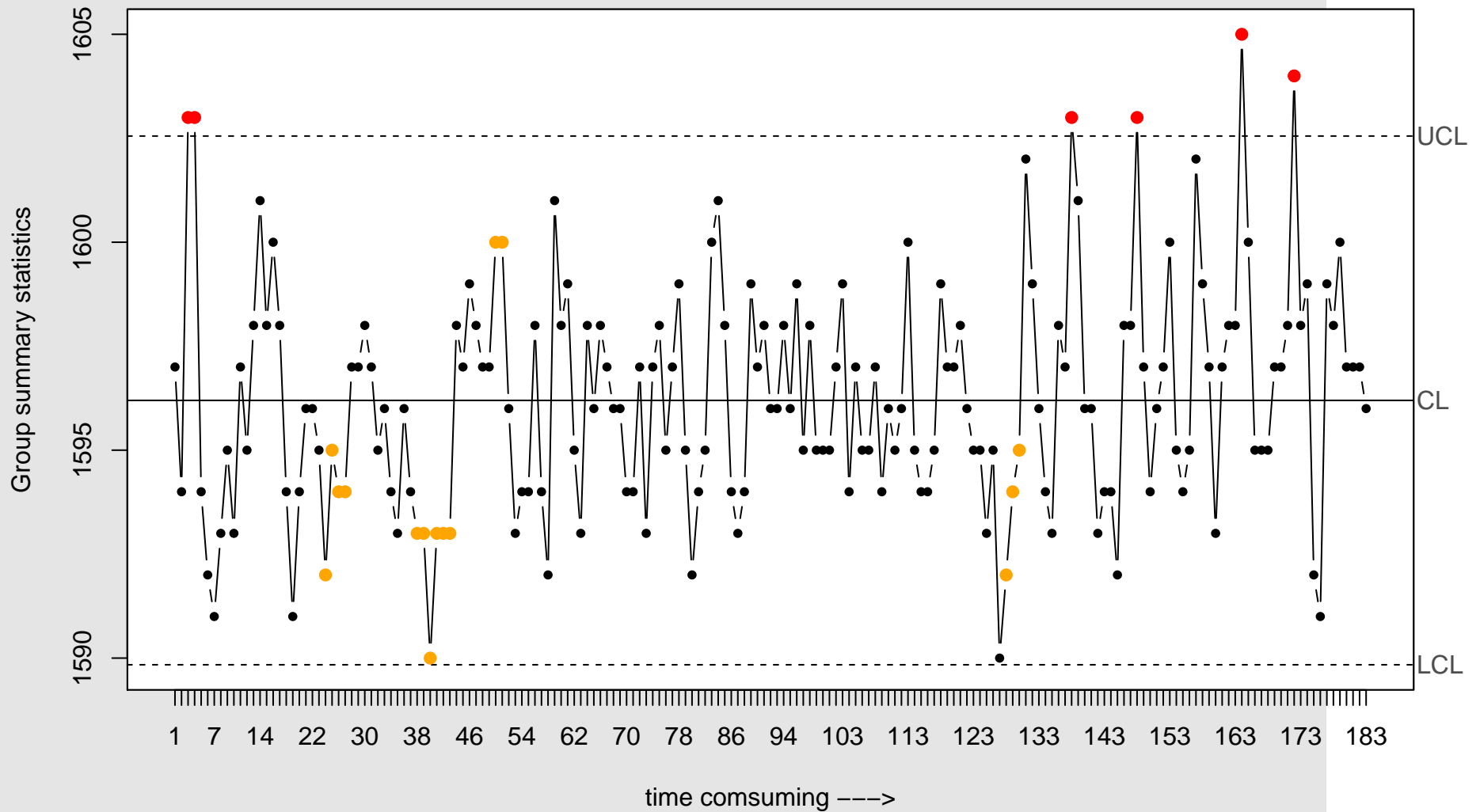
Number of groups = 183
Center = 1596.197
StdDev = 2.118892

LCL = 1589.84
UCL = 1602.553

Number beyond limits = 6
Number violating runs = 15

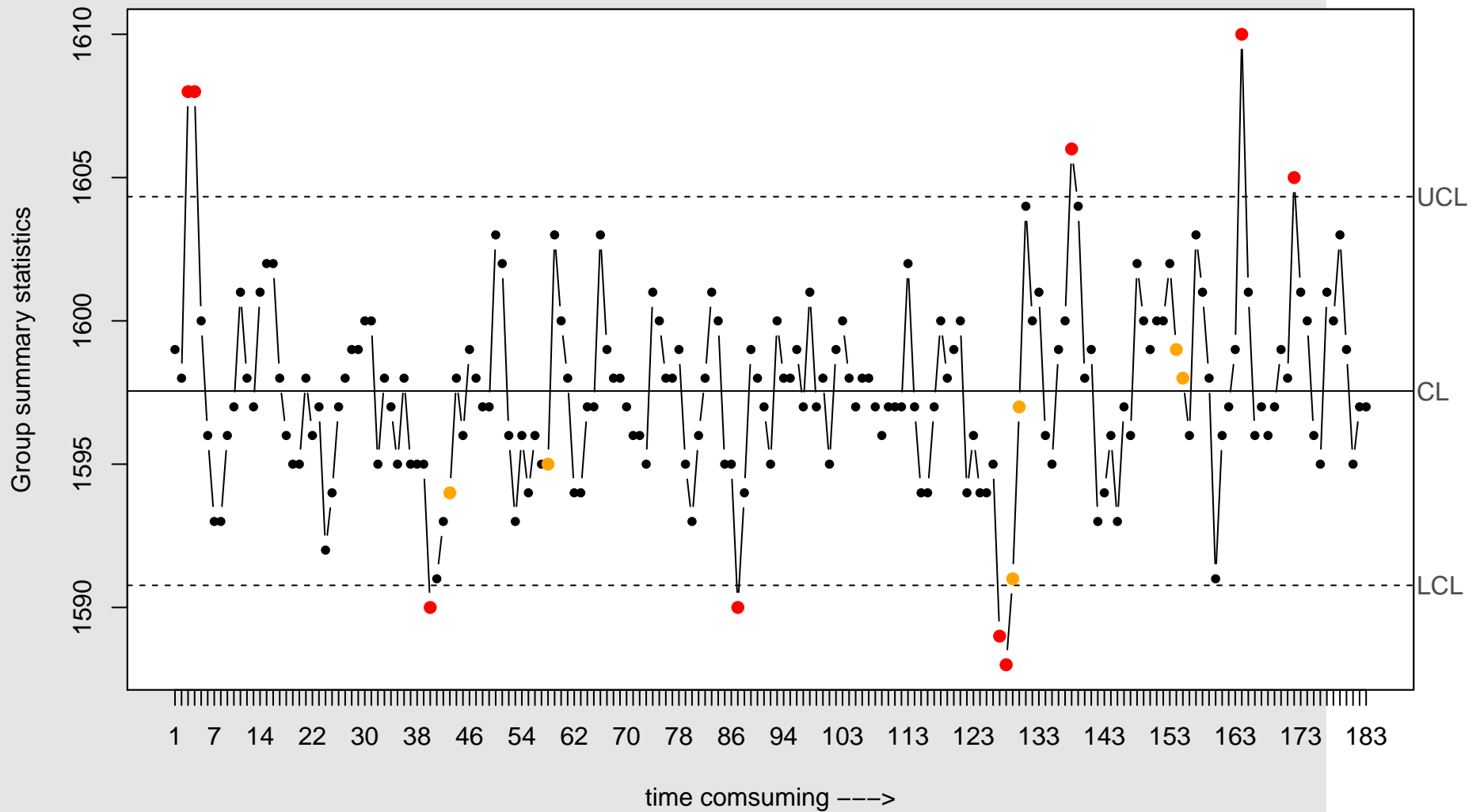# 191th column point of this product

Group summary statistics

1605

1600

1595

1590

UCL

CL

LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ---->
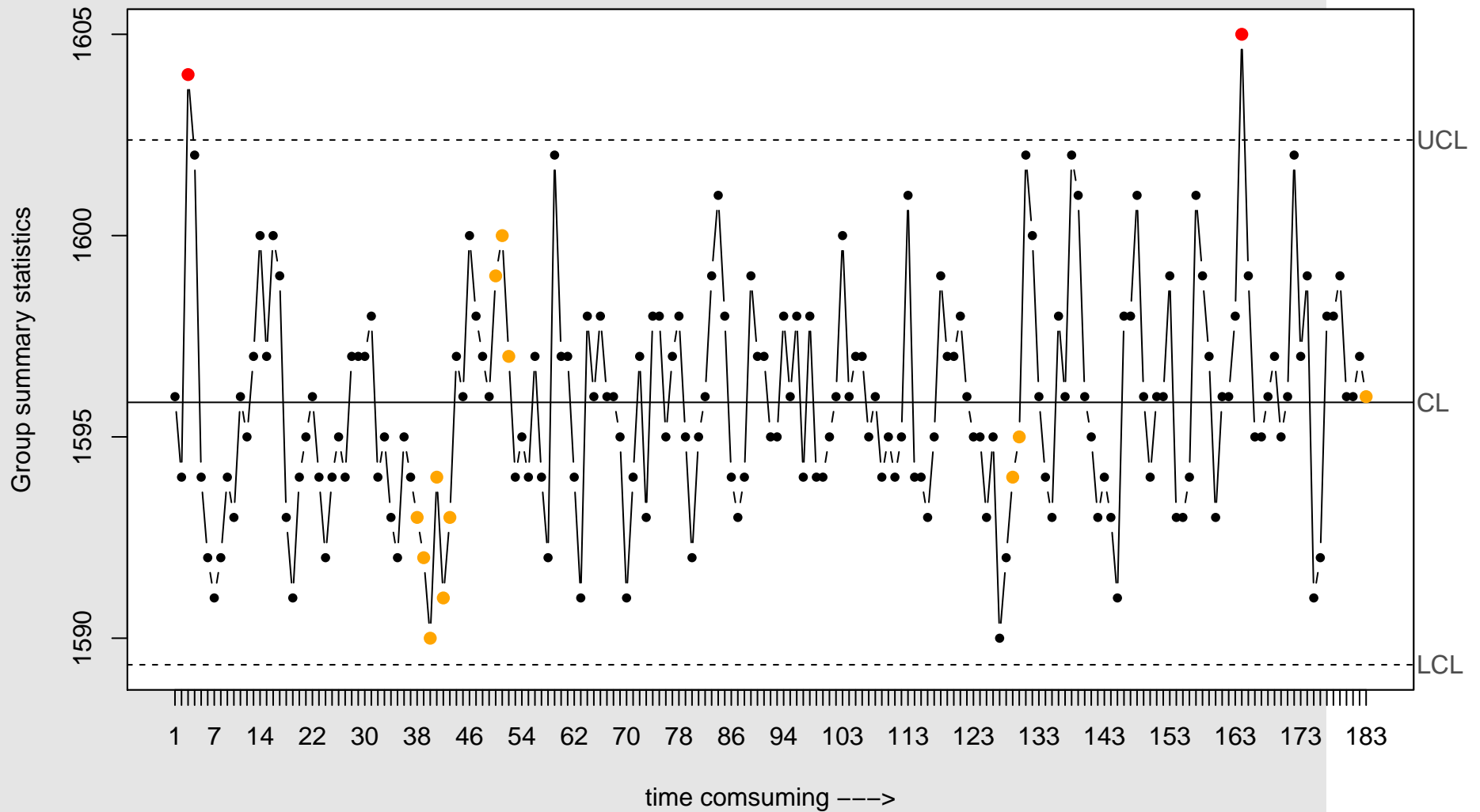
Number of groups = 183
Center = 1595.858
StdDev = 2.172473

LCL = 1589.341
UCL = 1602.375

Number beyond limits = 2
Number violating runs = 12

192th column point of this product

Group summary statistics

UCL

CL

LCL

time comsuming ---->
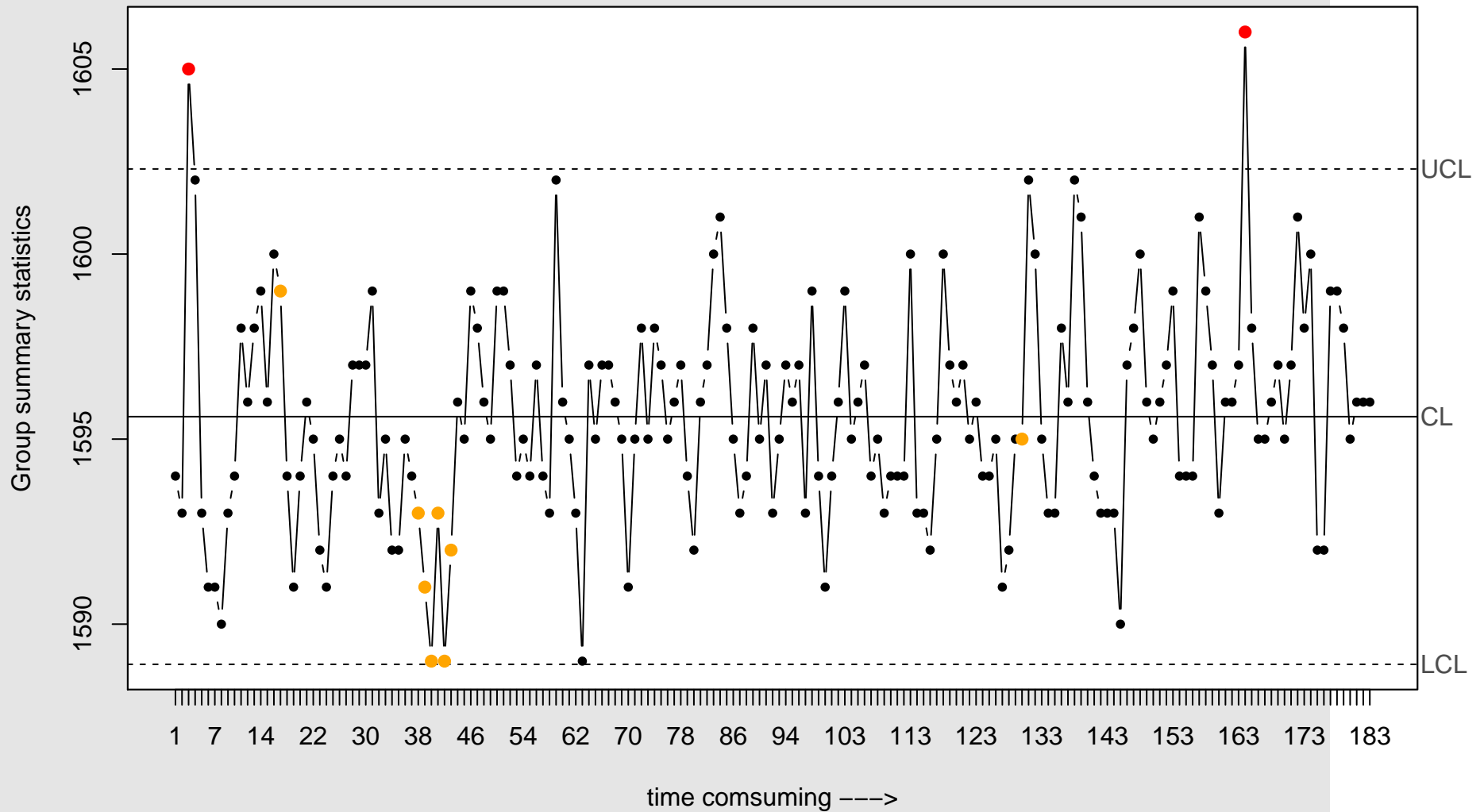
Number of groups = 183
Center = 1595.607
StdDev = 2.230925

LCL = 1588.914
UCL = 1602.299

Number beyond limits = 2
Number violating runs = 8
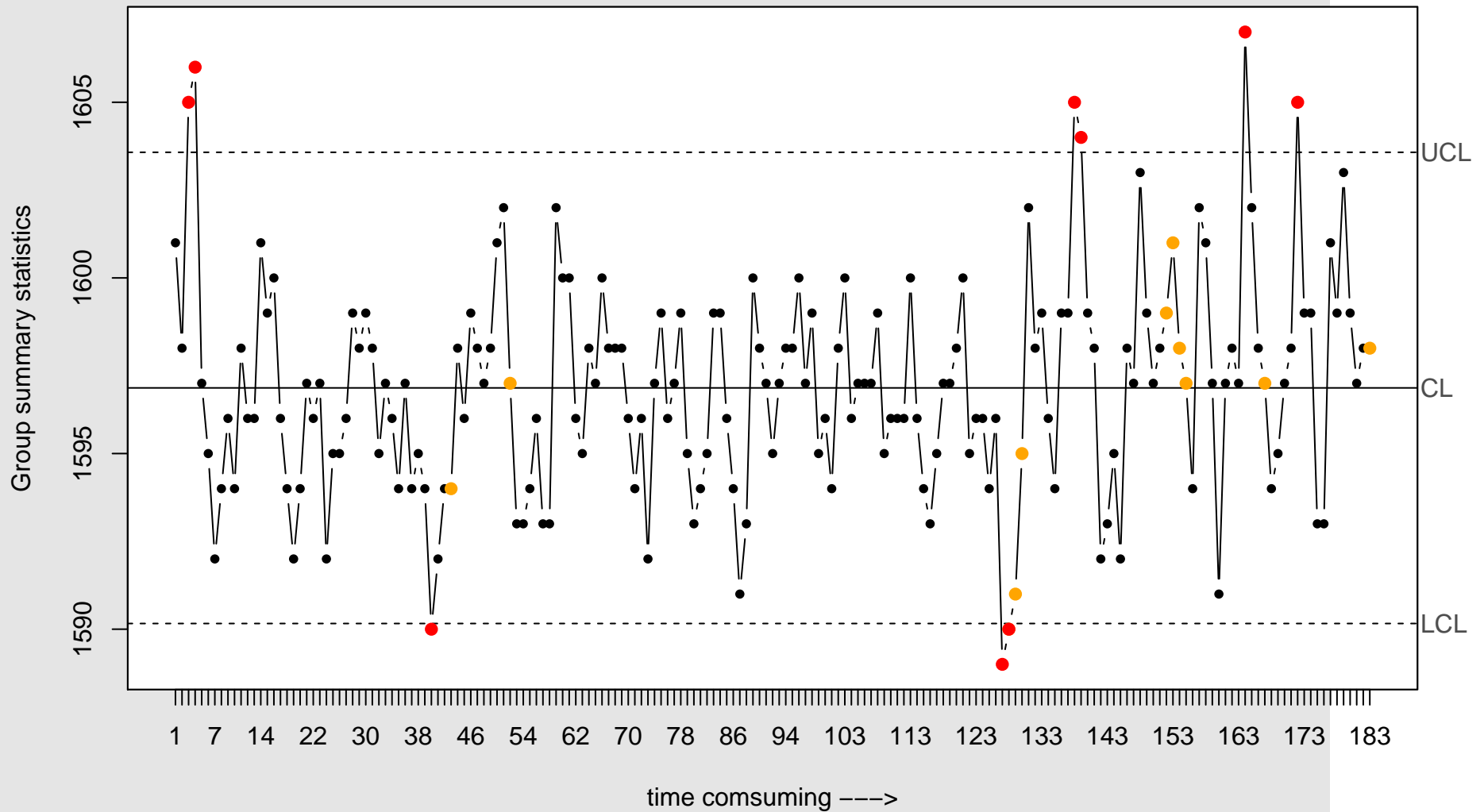
193th column point of this product

Group summary statistics

1605
1600
1595
1590

UCL
CL
LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ––––>

Number of groups = 183
Center = 1595.481
StdDev = 2.221183

LCL = 1588.817
UCL = 1602.144

Number beyond limits = 7
Number violating runs = 7

194th column point of this product

Group summary statistics

1605

1600

1595

1590

UCL

CL

LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ––––>

Number of groups = 183
Center = 1595.262   LCL = 1588.087   Number beyond limits = 6
StdDev = 2.391669   UCL = 1602.437   Number violating runs = 6

195th column point of this product

Group summary statistics

time comsuming ———>

Number of groups = 183
Center = 1595
StdDev = 2.211441

LCL = 1588.366
UCL = 1601.634

Number beyond limits = 5
Number violating runs = 3

196th column point of this product

Group summary statistics

time comsuming –––>

Number of groups = 183
Center = 1594.869
StdDev = 2.123763
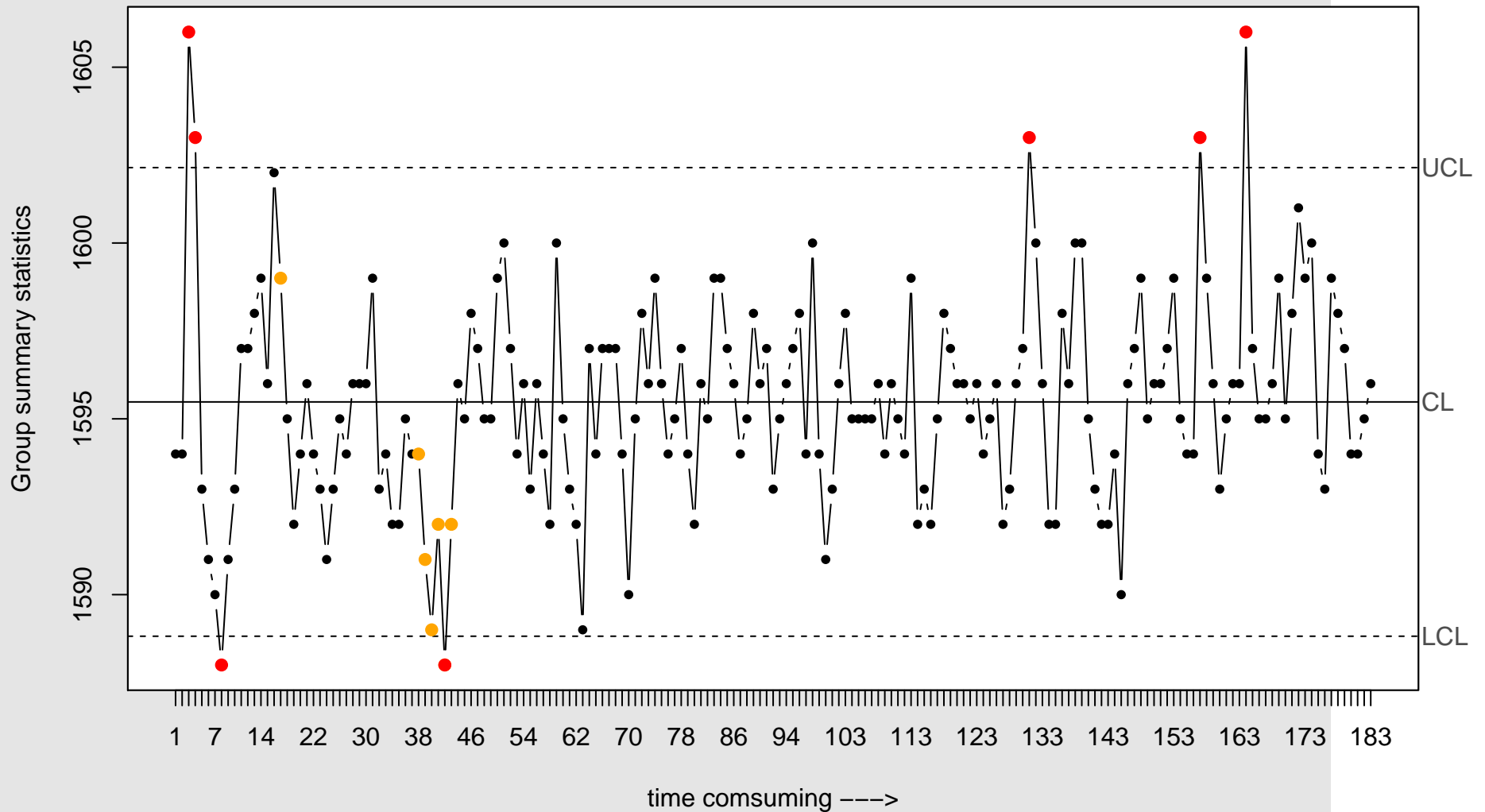
LCL = 1588.498
UCL = 1601.24

Number beyond limits = 6
Number violating runs = 7

197th column point of this product

Group summary statistics

time comsuming –––>

Number of groups = 183
Center = 1594.754   LCL = 1588.617   Number beyond limits = 9
StdDev = 2.045827   UCL = 1600.892   Number violating runs = 8

198th column point of this product
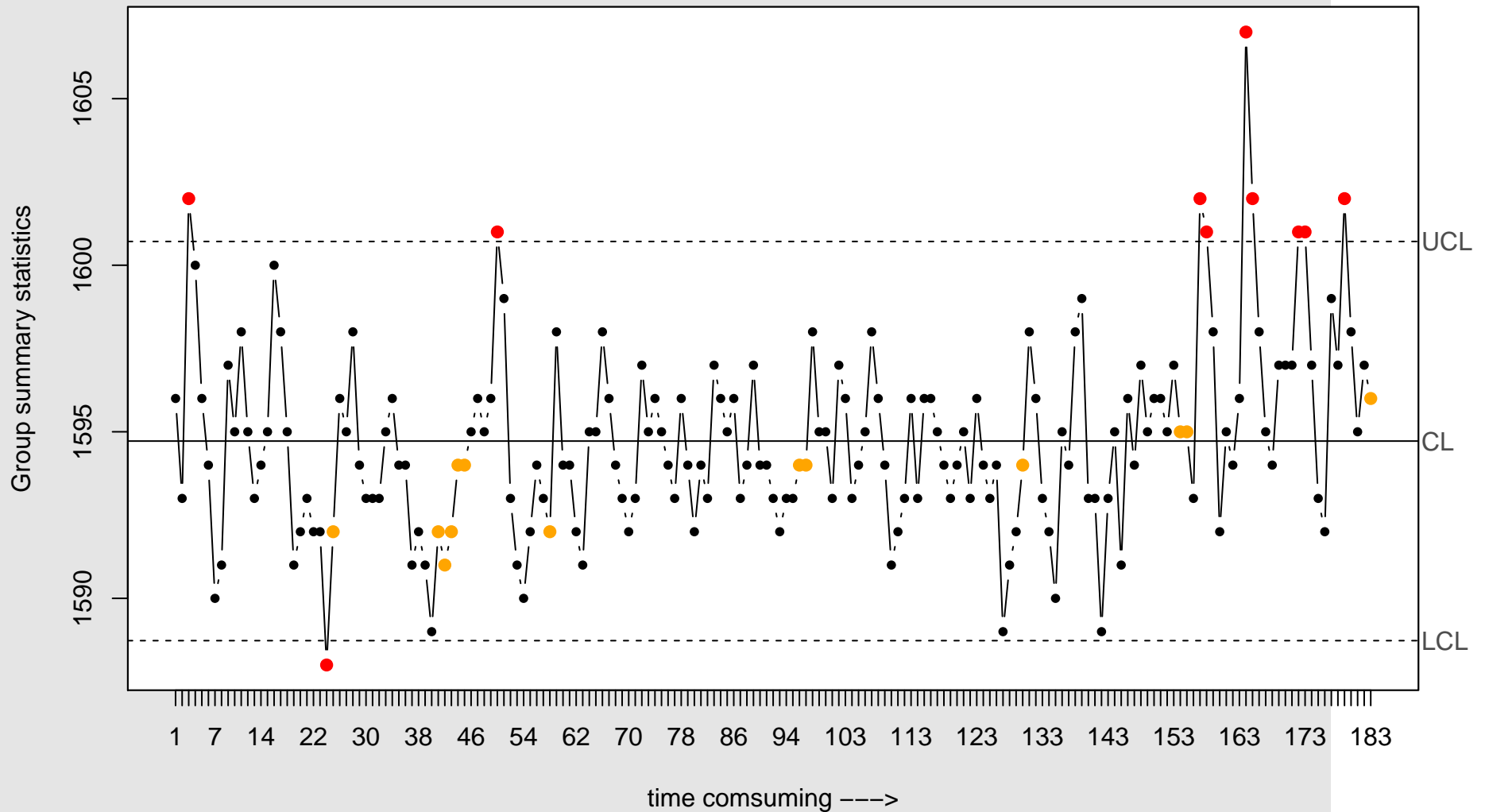
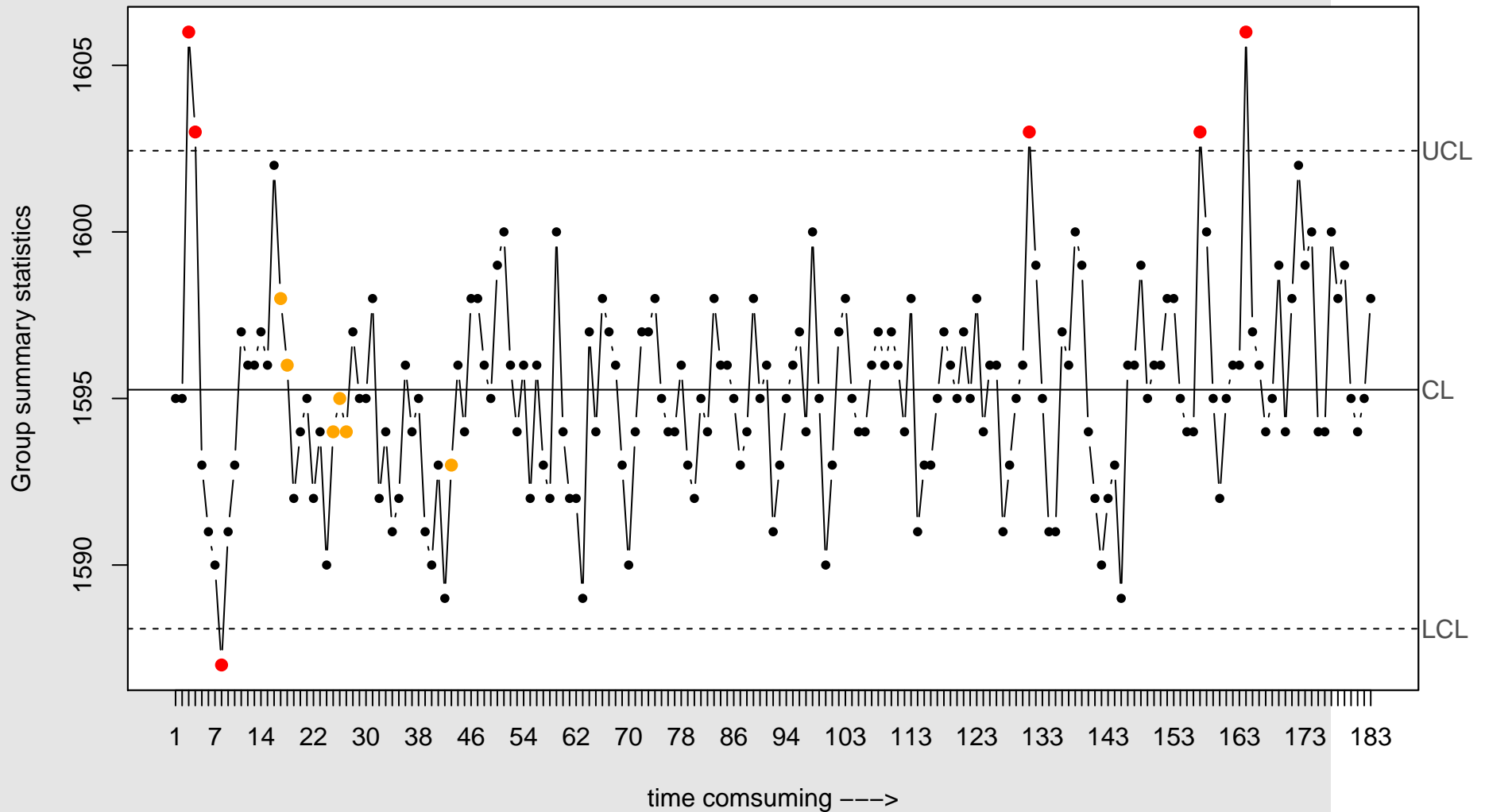Number of groups = 183
Center = 1594.721   LCL = 1588.73   Number beyond limits = 10
StdDev = 1.997116   UCL = 1600.713   Number violating runs = 13

199th column point of this product

Group summary statistics

time comsuming ––––>
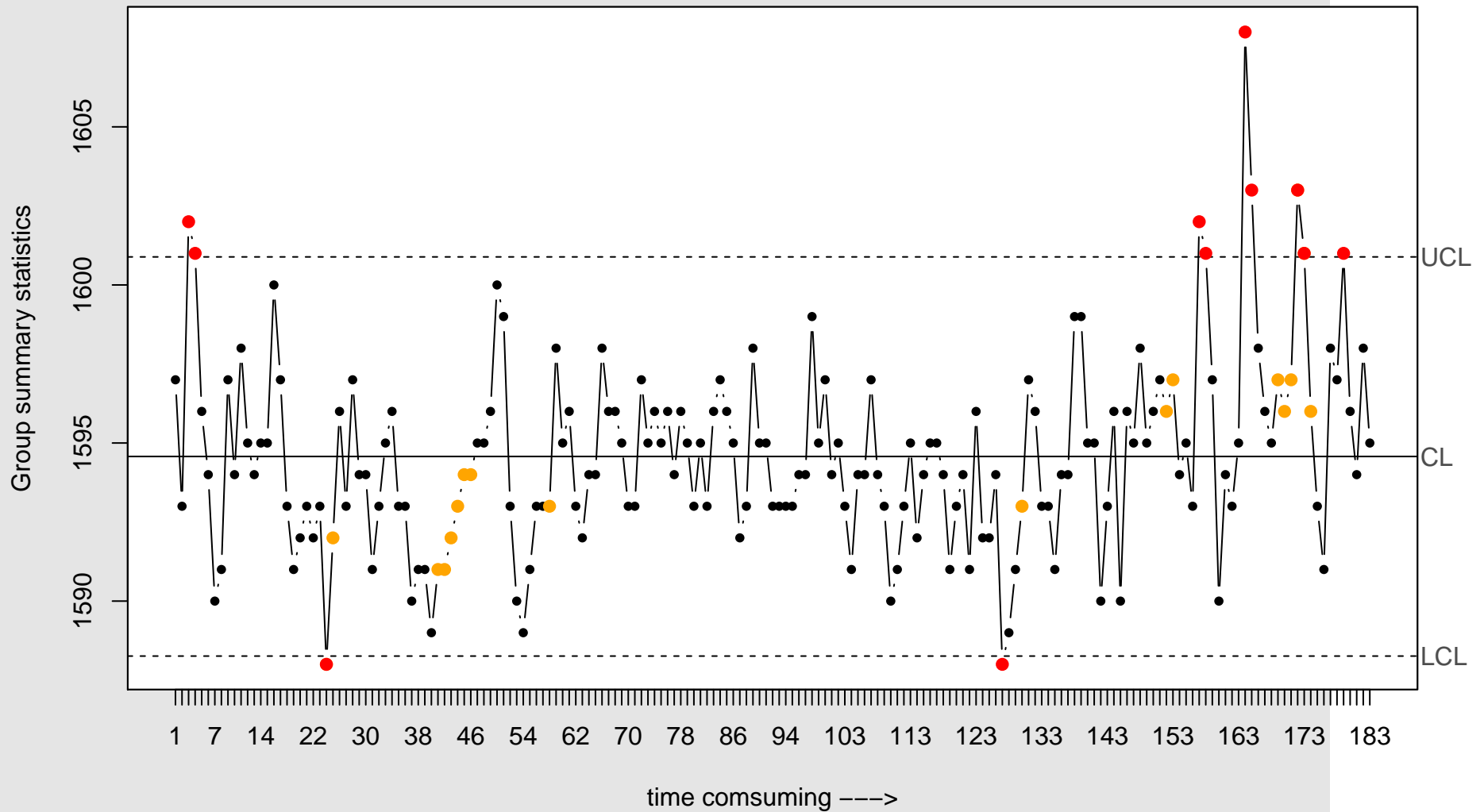
Number of groups = 183
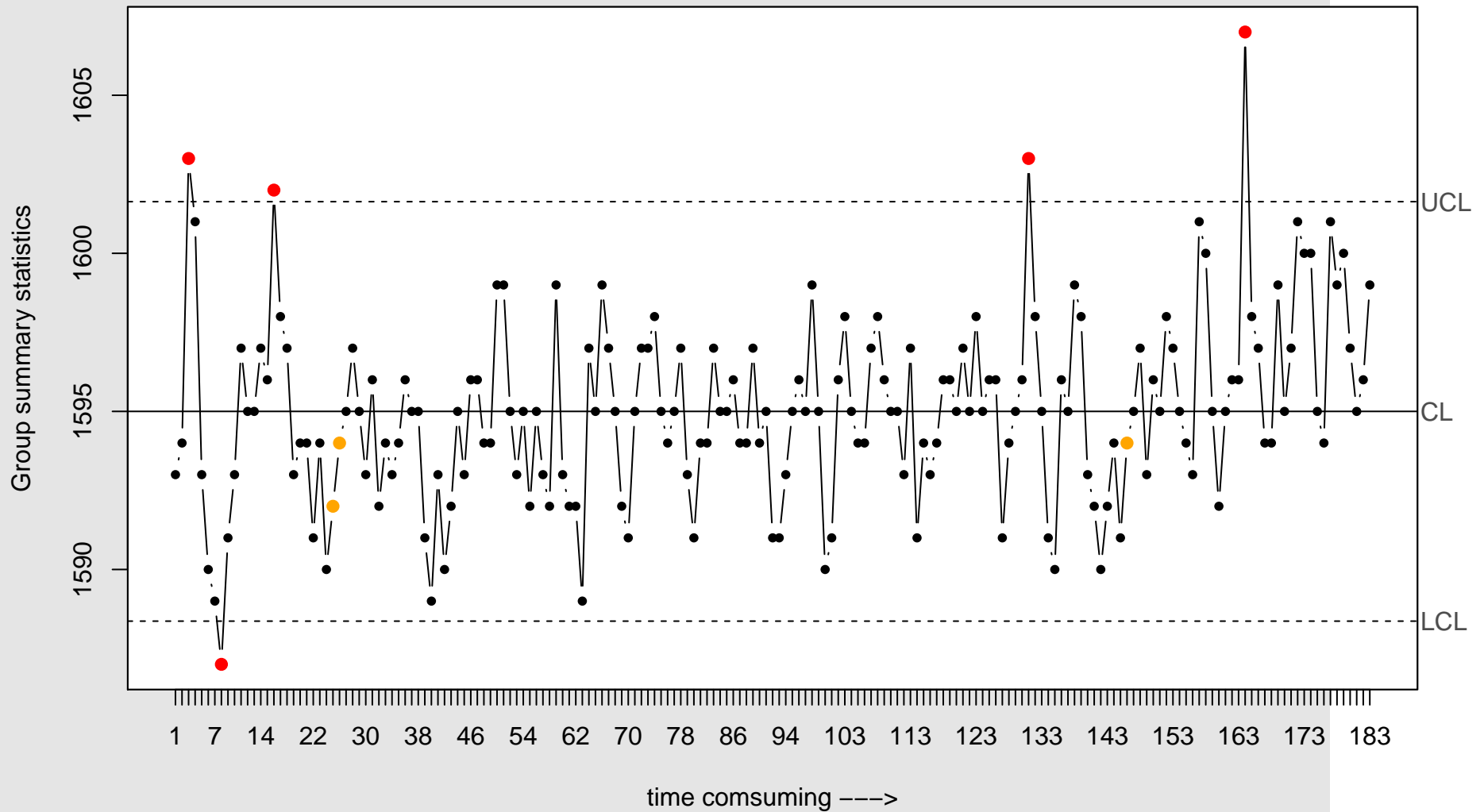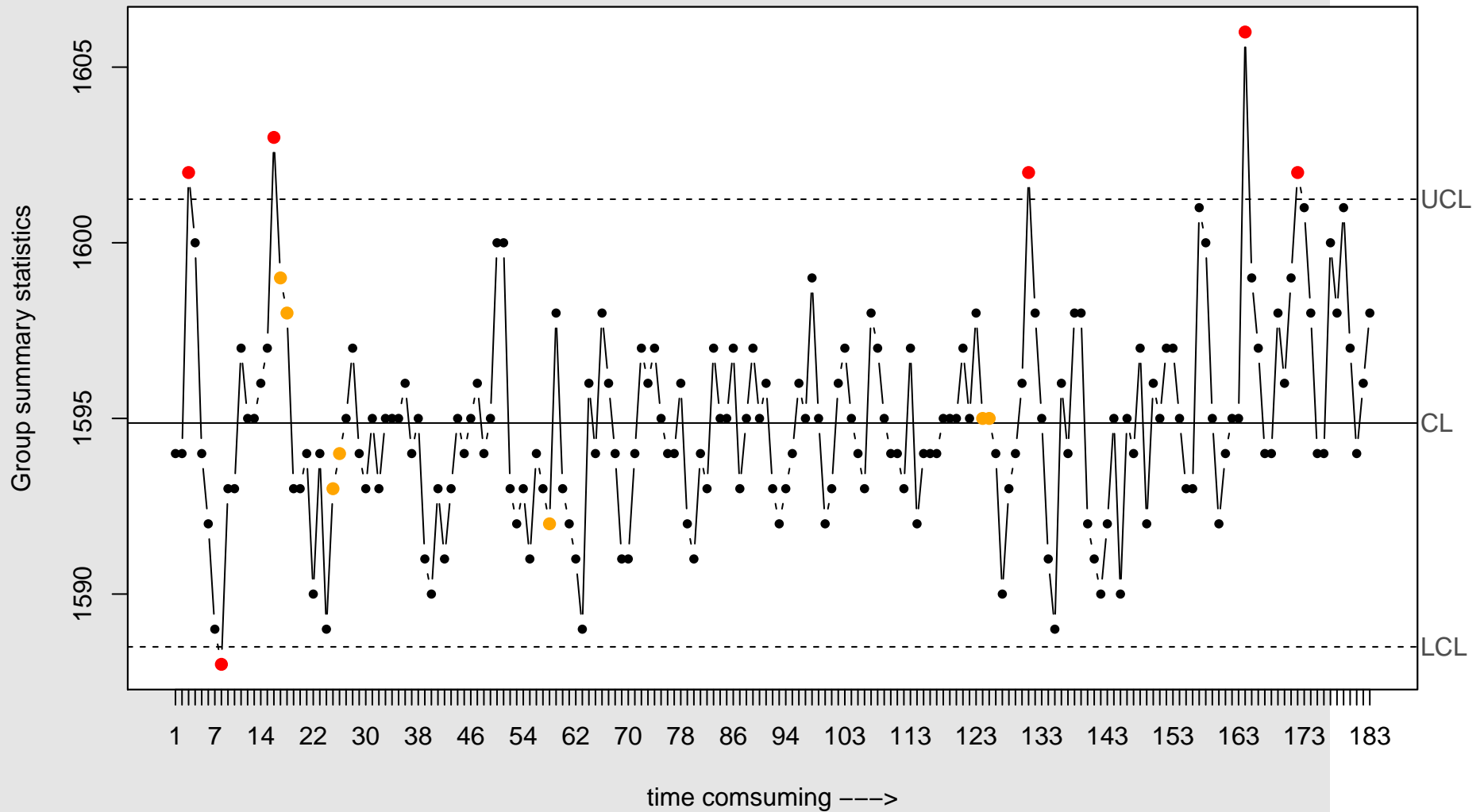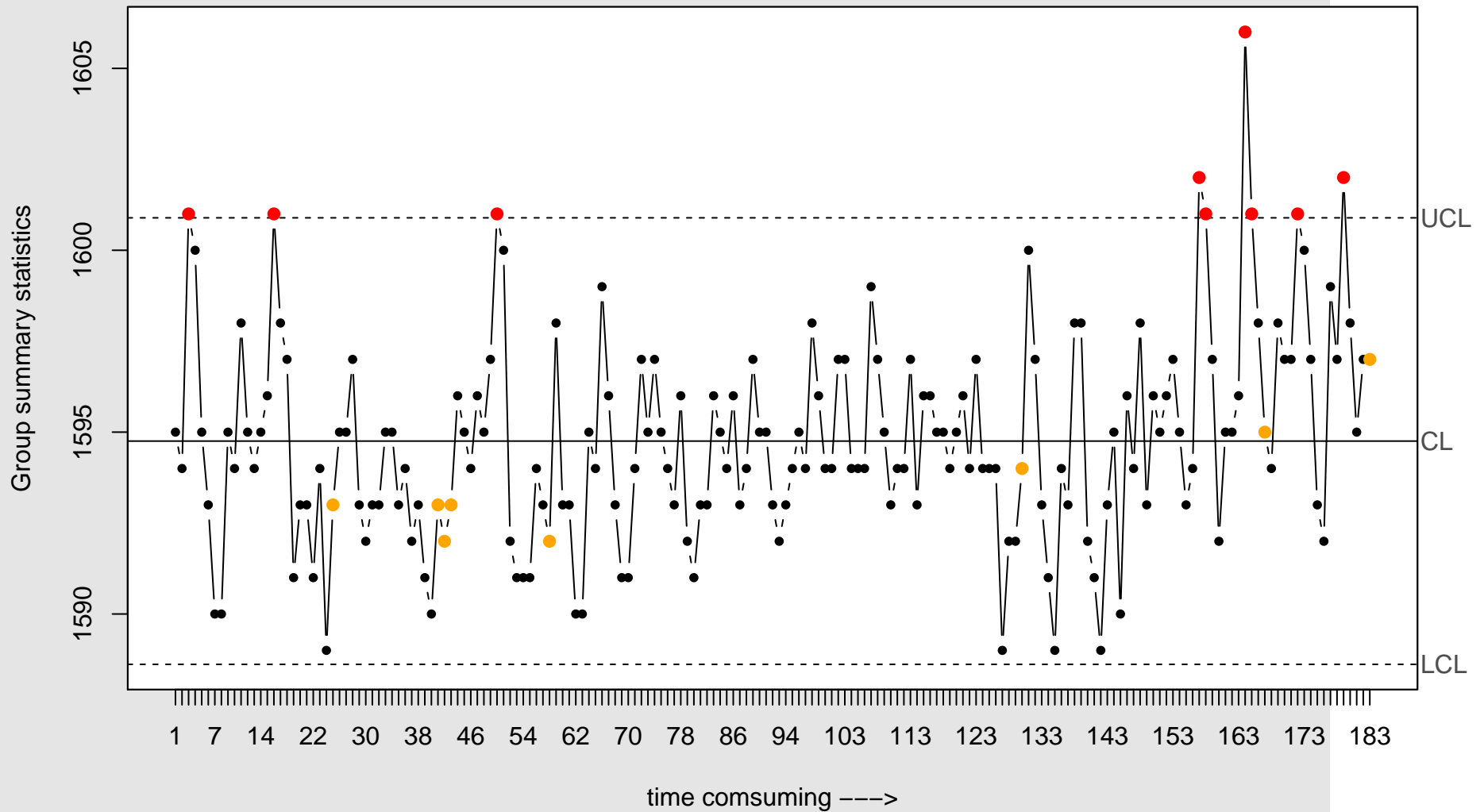Center = 1594.574
StdDev = 2.104279

LCL = 1588.261
UCL = 1600.887

Number beyond limits = 11
Number violating runs = 18

200th column point of this product
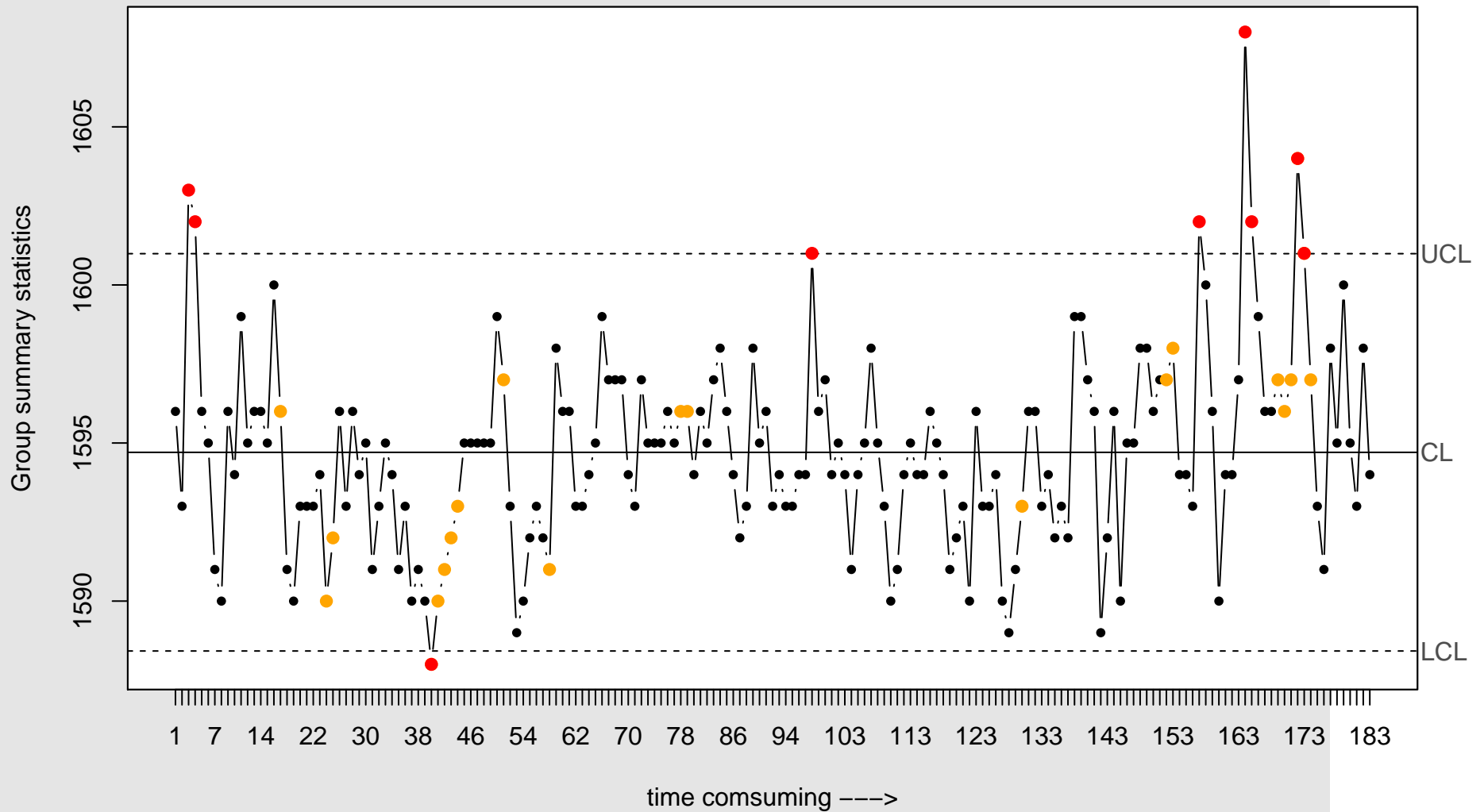
Number of groups = 183
Center = 1594.705   LCL = 1588.421   Number beyond limits = 9
StdDev = 2.094537   UCL = 1600.989   Number violating runs = 21

201th column point of this product

Group summary statistics

time comsuming ——->

Number of groups = 183
Center = 1594.672   LCL = 1588.403   Number beyond limits = 9
StdDev = 2.089666   UCL = 1600.941   Number violating runs = 17

202th column point of this product

Group summary statistics

time comsuming ––––>
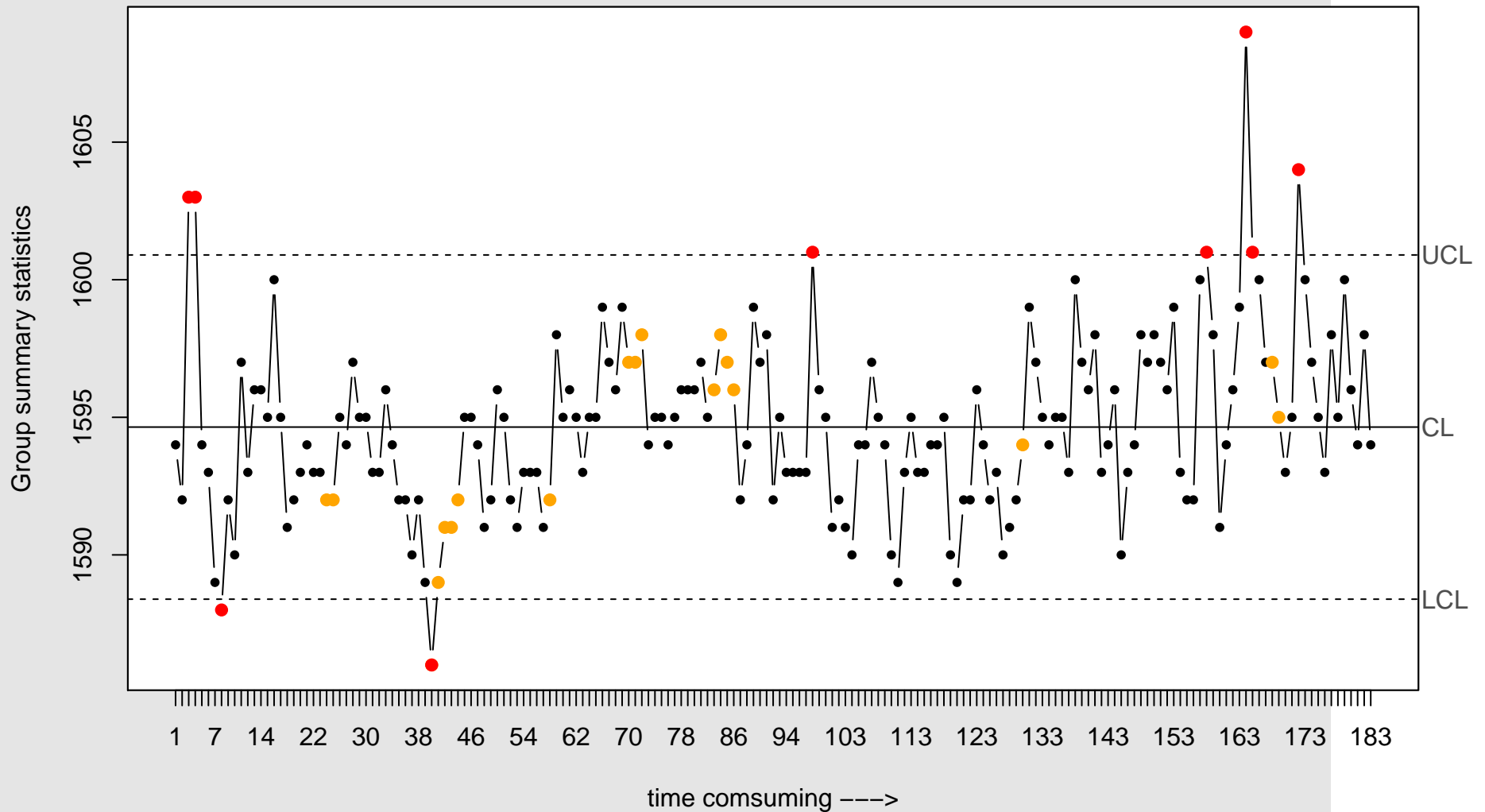
Number of groups = 183
Center = 1594.645
StdDev = 2.084795

LCL = 1588.39
UCL = 1600.899

Number beyond limits = 9
Number violating runs = 18

203th column point of this product

Group summary statistics

time comsuming –––>
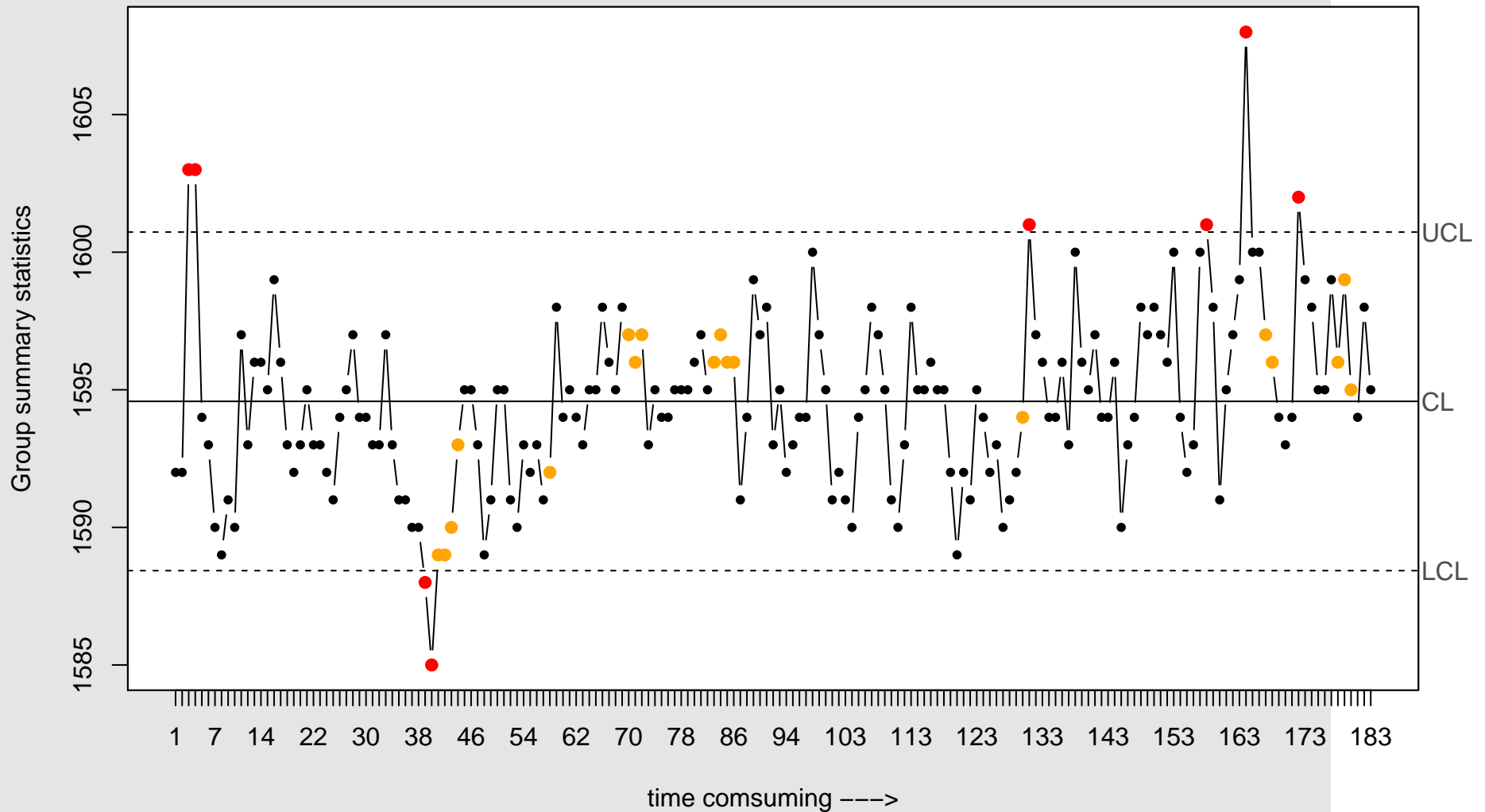
Number of groups = 183
Center = 1594.579
StdDev = 2.050698

LCL = 1588.427
UCL = 1600.731

Number beyond limits = 8
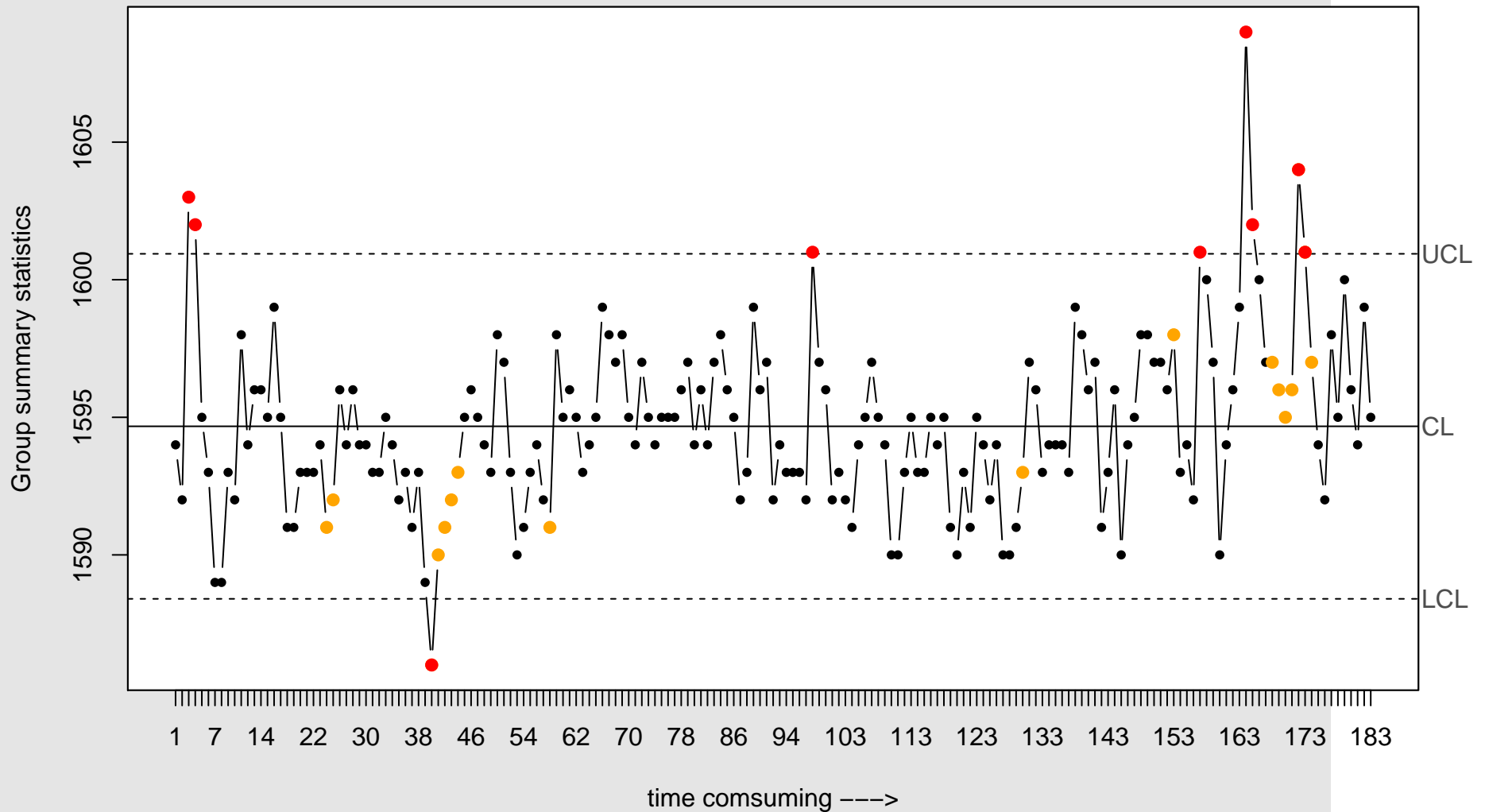Number violating runs = 19

204th column point of this product

Group summary statistics

1605
1600 — — — — — — — — — — — — — — — — — — UCL
1595 ——————————————————— CL
1590
1585 — — — — — — — — — — — — — — — — — — LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ---->

Number of groups = 183
Center = 1594.53   LCL = 1588.32   Number beyond limits = 11
StdDev = 2.070182   UCL = 1600.741   Number violating runs = 8

205th column point of this product

Group summary statistics

time comsuming ----->
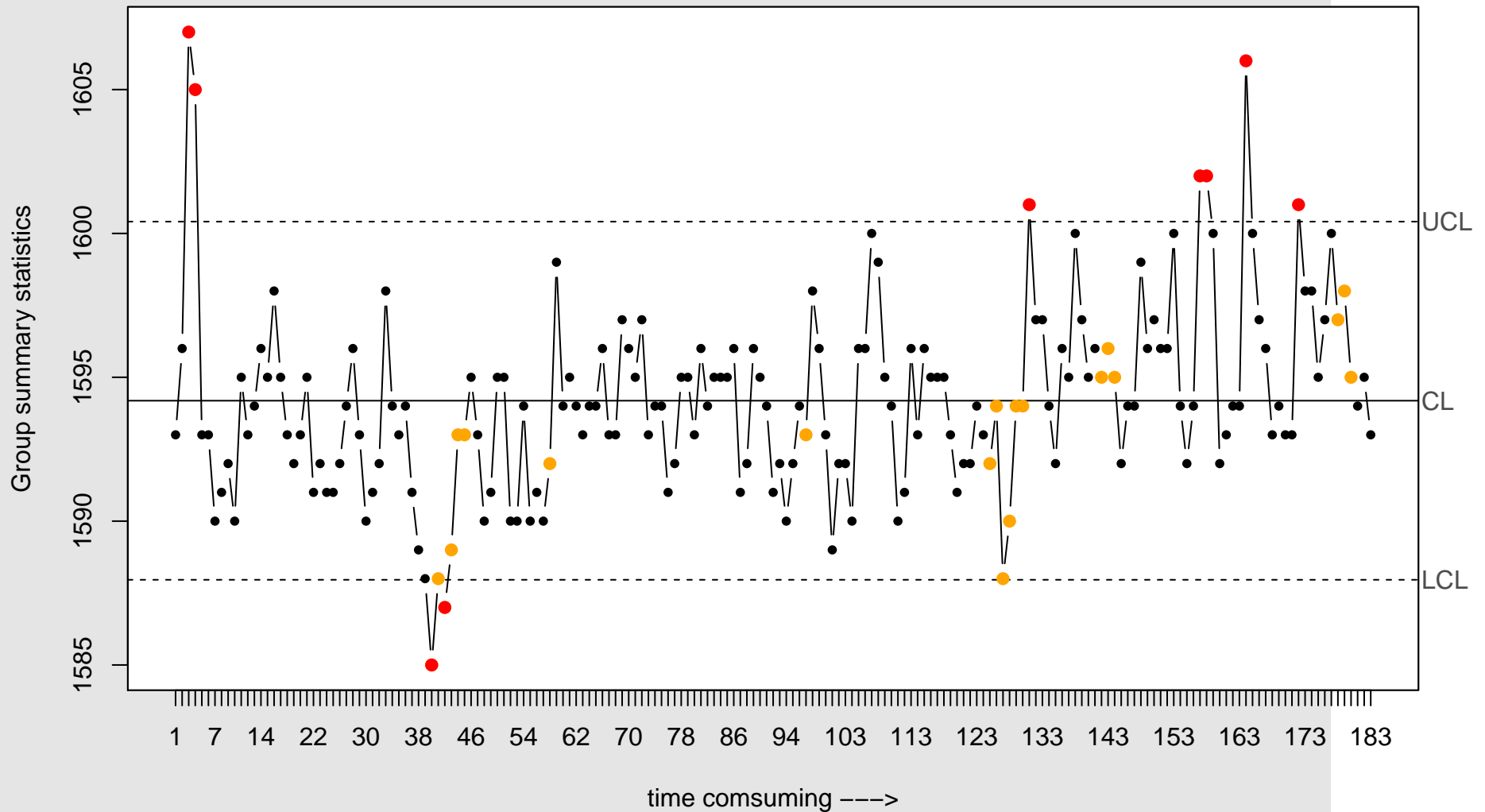
Number of groups = 183
Center = 1594.186   LCL = 1587.961   Number beyond limits = 9
StdDev = 2.075053   UCL = 1600.411   Number violating runs = 20

206th column point of this product

Group summary statistics

UCL

CL

LCL

time comsuming –––>

Number of groups = 183
Center = 1593.907   LCL = 1587.58   Number beyond limits = 9
StdDev = 2.10915   UCL = 1600.235   Number violating runs = 12

207th column point of this product

Group summary statistics

time comsuming ---->
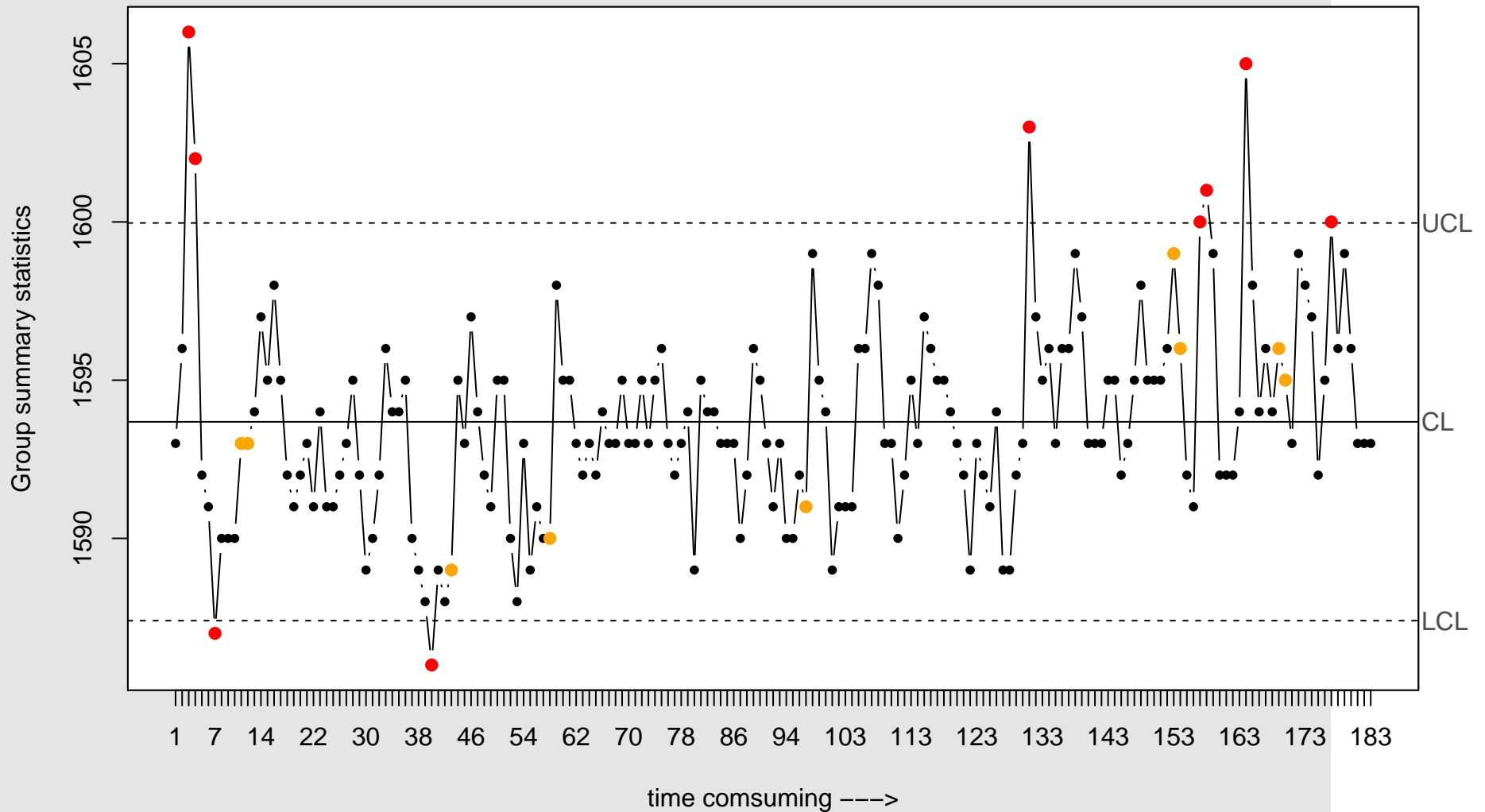
Number of groups = 183
Center = 1593.683   LCL = 1587.399   Number beyond limits = 9
StdDev = 2.094537   UCL = 1599.967   Number violating runs = 9

208th column point of this product

Group summary statistics

time comsuming ---->
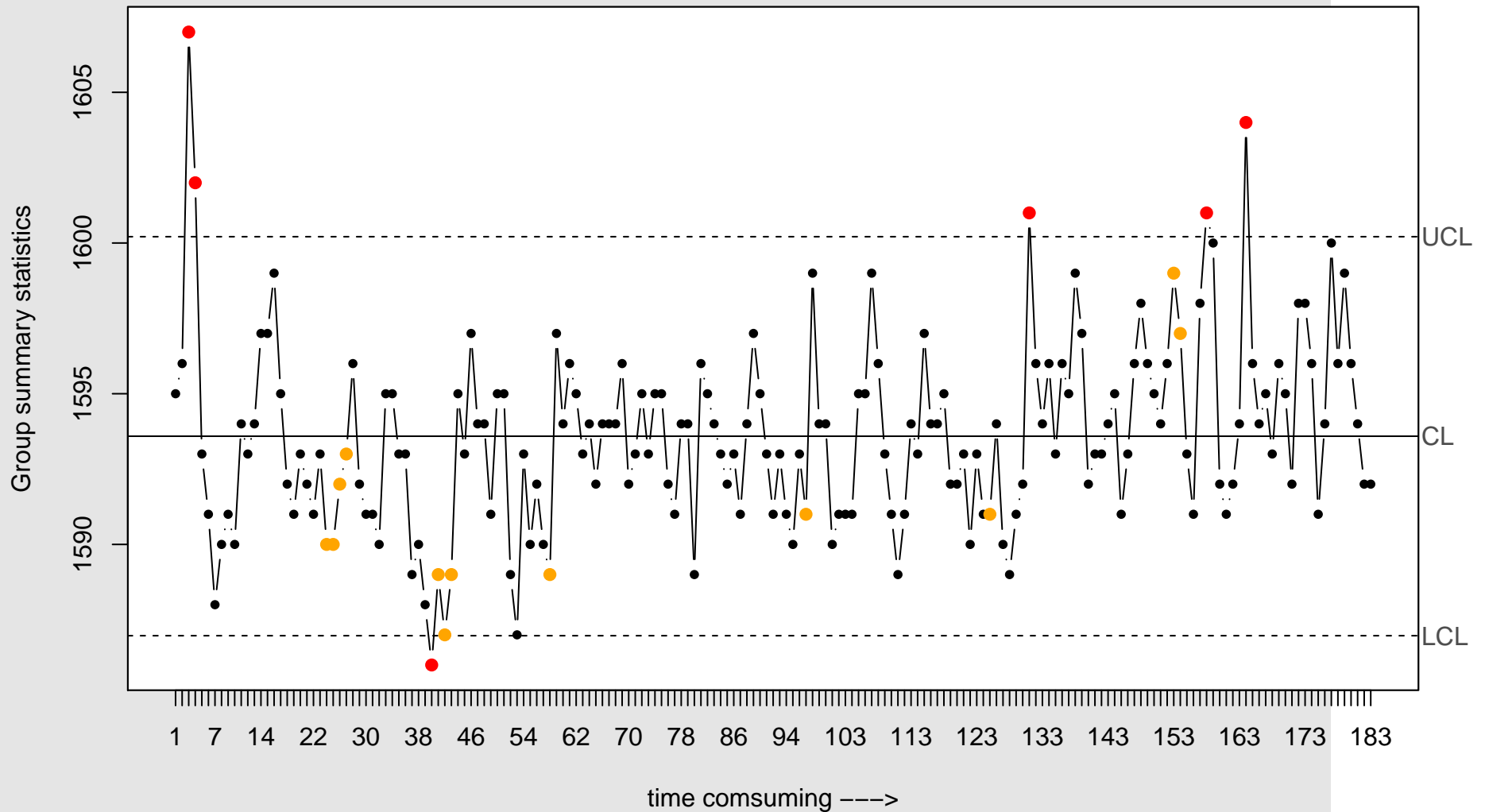
Number of groups = 183
Center = 1593.59
StdDev = 2.20657

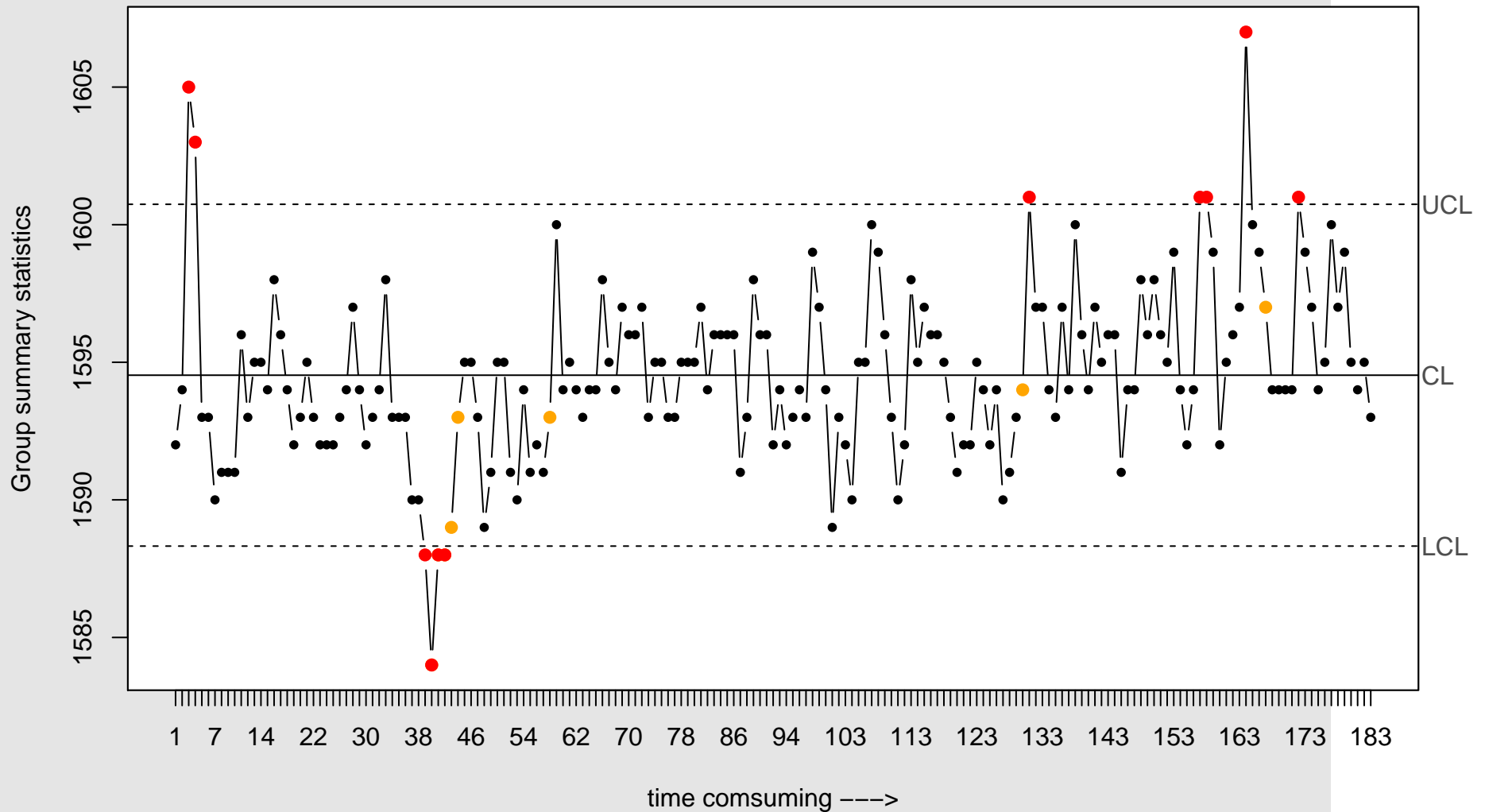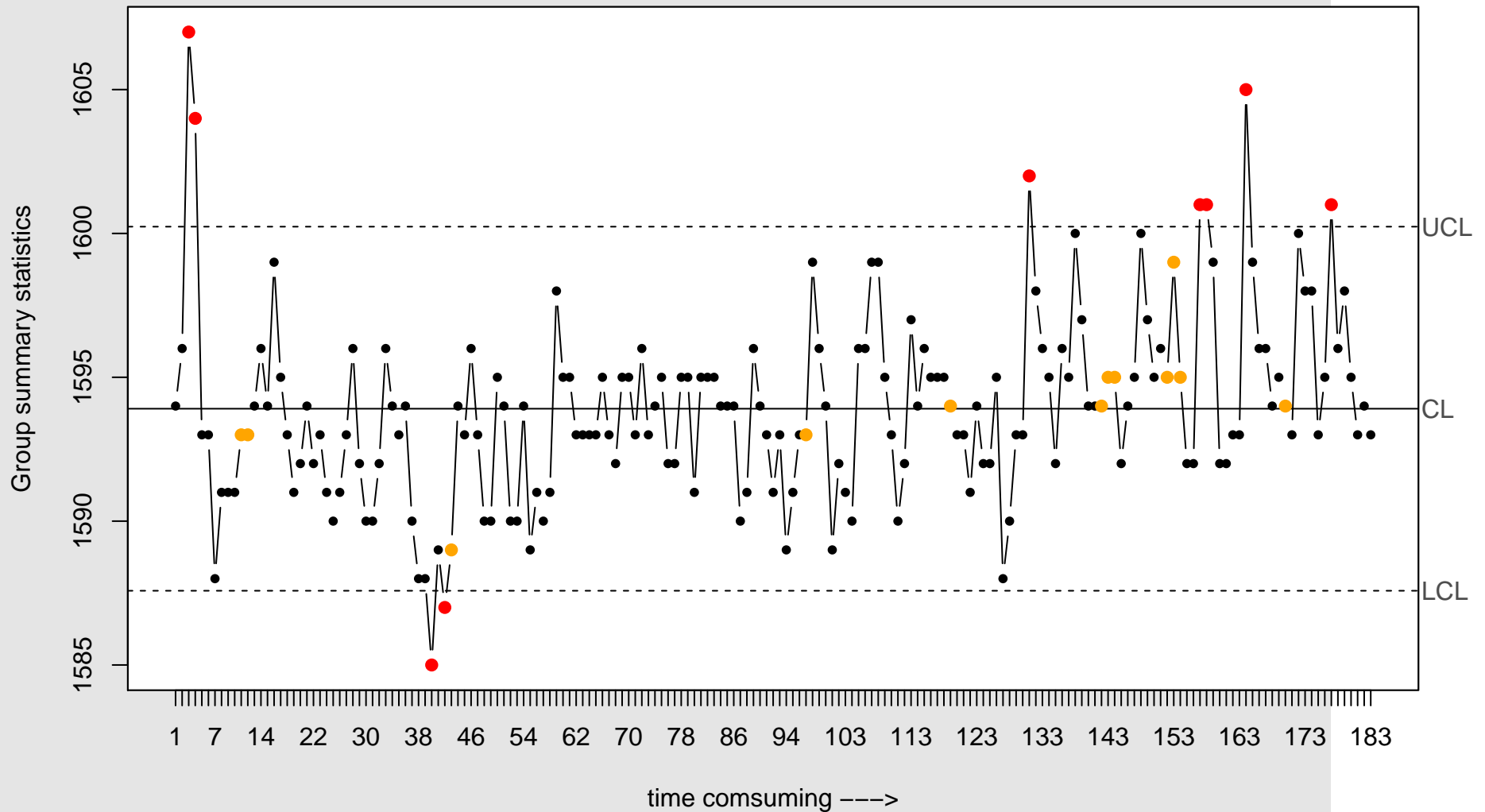LCL = 1586.97
UCL = 1600.21

Number beyond limits = 6
Number violating runs = 12

209th column point of this product

Group summary statistics

time comsuming --->
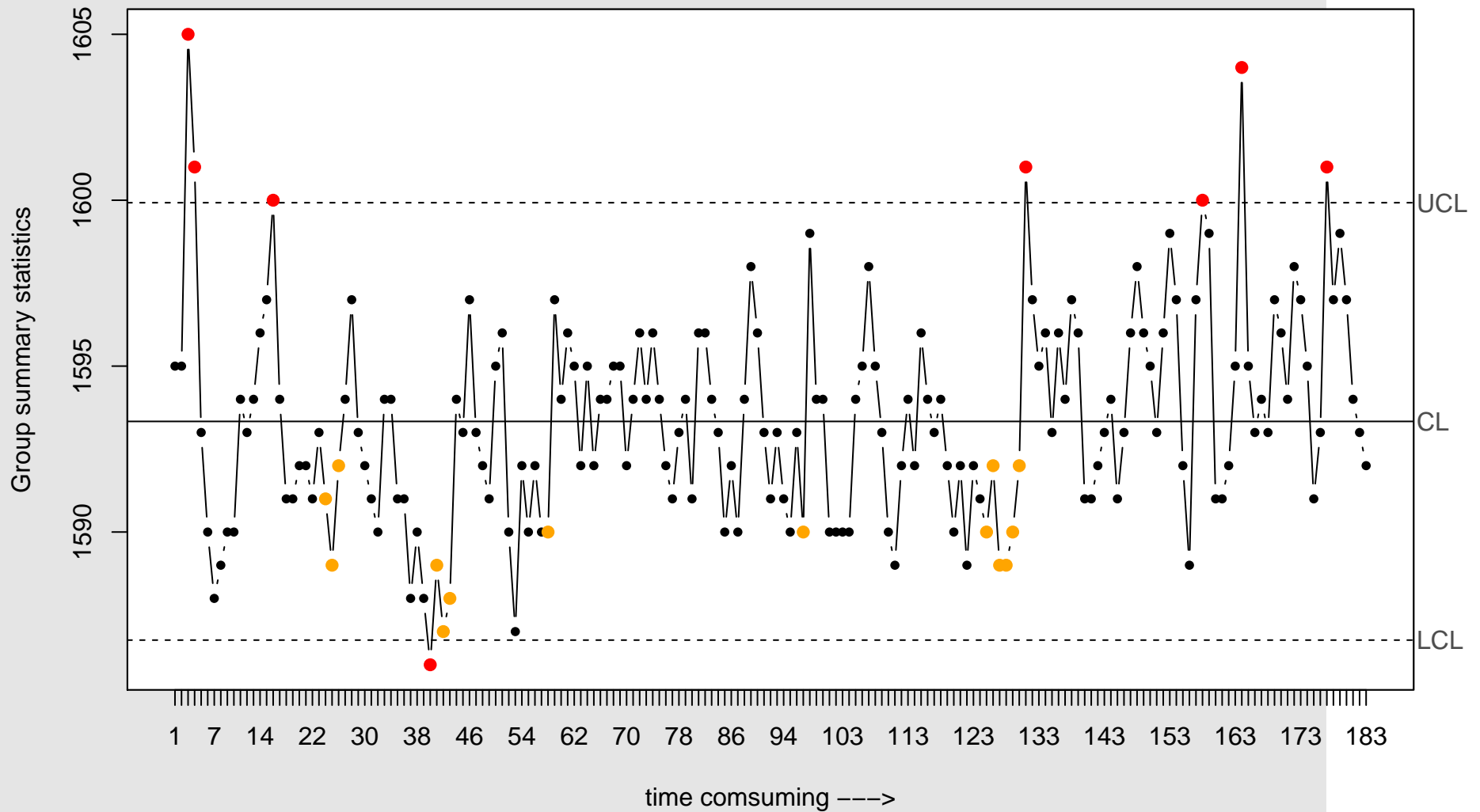
Number of groups = 183
Center = 1593.333
StdDev = 2.196828

LCL = 1586.743
UCL = 1599.924

Number beyond limits = 8
Number violating runs = 14

210th column point of this product

Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1593.333   LCL = 1587.006   Number beyond limits = 8
StdDev = 2.10915   UCL = 1599.661   Number violating runs = 21

211th column point of this product

Group summary statistics

time comsuming --->
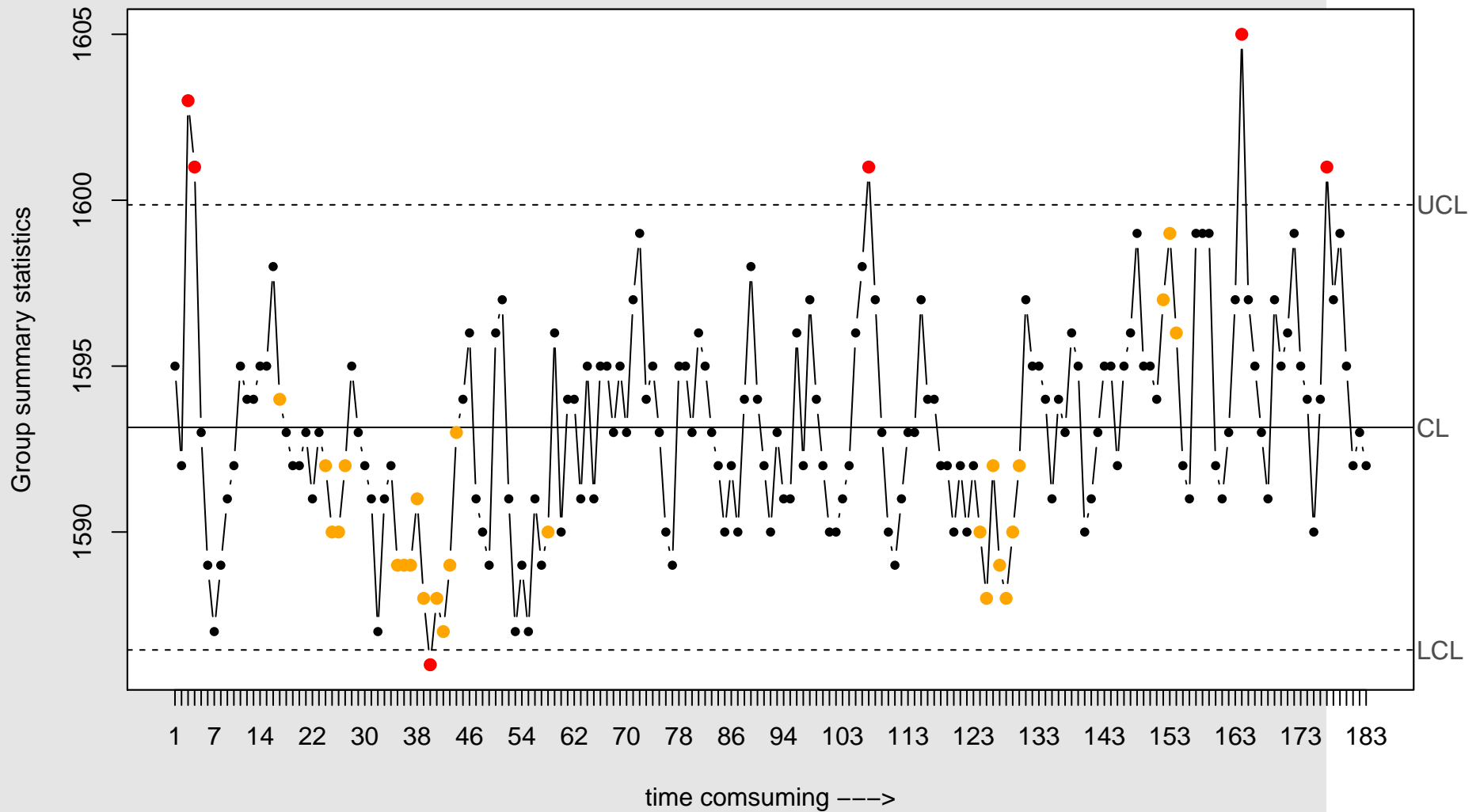
Number of groups = 183
Center = 1593.153
StdDev = 2.235796

LCL = 1586.446
UCL = 1599.86

Number beyond limits = 6
Number violating runs = 26

212th column point of this product

Group summary statistics

UCL

CL

LCL

time comsuming ---->
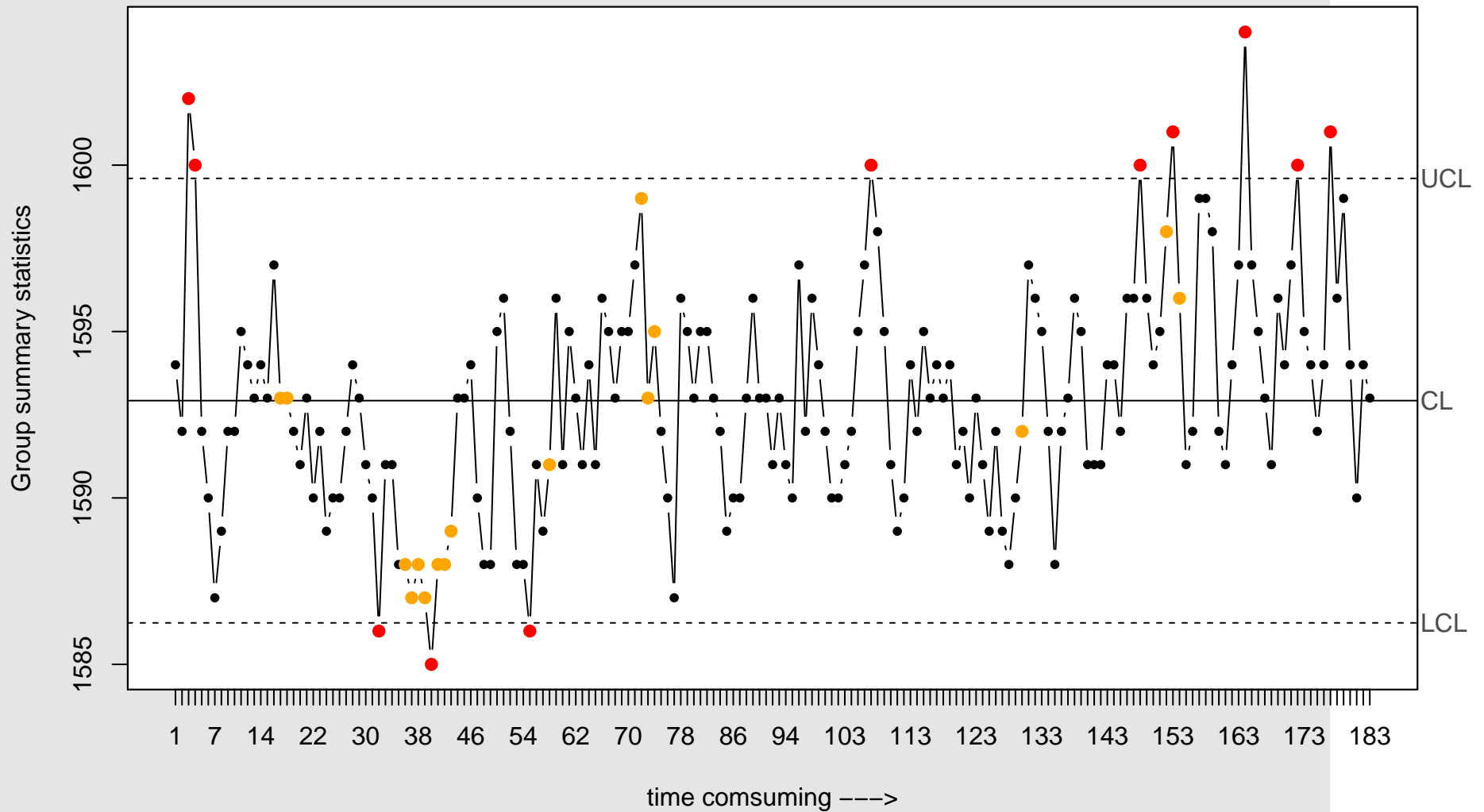
Number of groups = 183
Center = 1592.923
StdDev = 2.226054

LCL = 1586.245
UCL = 1599.602

Number beyond limits = 11
Number violating runs = 18

213th column point of this product

Group summary statistics

time comsuming ––––>
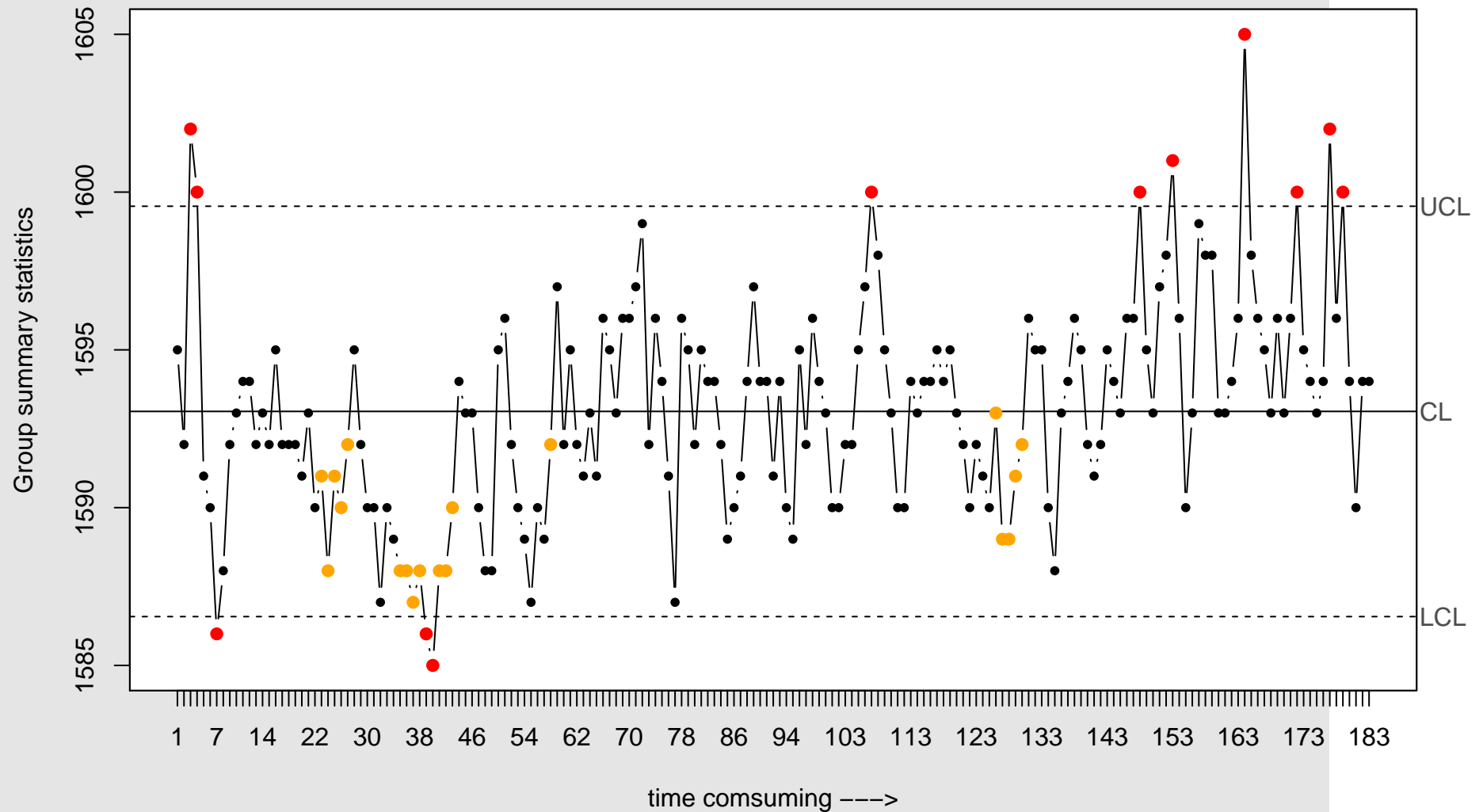
Number of groups = 183
Center = 1593.049
StdDev = 2.167602

LCL = 1586.546
UCL = 1599.552

Number beyond limits = 12
Number violating runs = 20

214th column point of this product

Group summary statistics

time comsuming ---->

UCL
CL
LCL

Number of groups = 183
Center = 1592.88   LCL = 1586.669   Number beyond limits = 9
StdDev = 2.070182   UCL = 1599.09   Number violating runs = 25

215th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1592.858   LCL = 1586.72   Number beyond limits = 11
StdDev = 2.045827   UCL = 1598.995   Number violating runs = 33

216th column point of this product

Group summary statistics

UCL

CL

LCL

1600

1595

1590

1585

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming –––>

Number of groups = 183
Center = 1592.923   LCL = 1587.181   Number beyond limits = 13
StdDev = 1.914309   UCL = 1598.666   Number violating runs = 28

217th column point of this product

Group summary statistics

UCL

CL

LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ---->
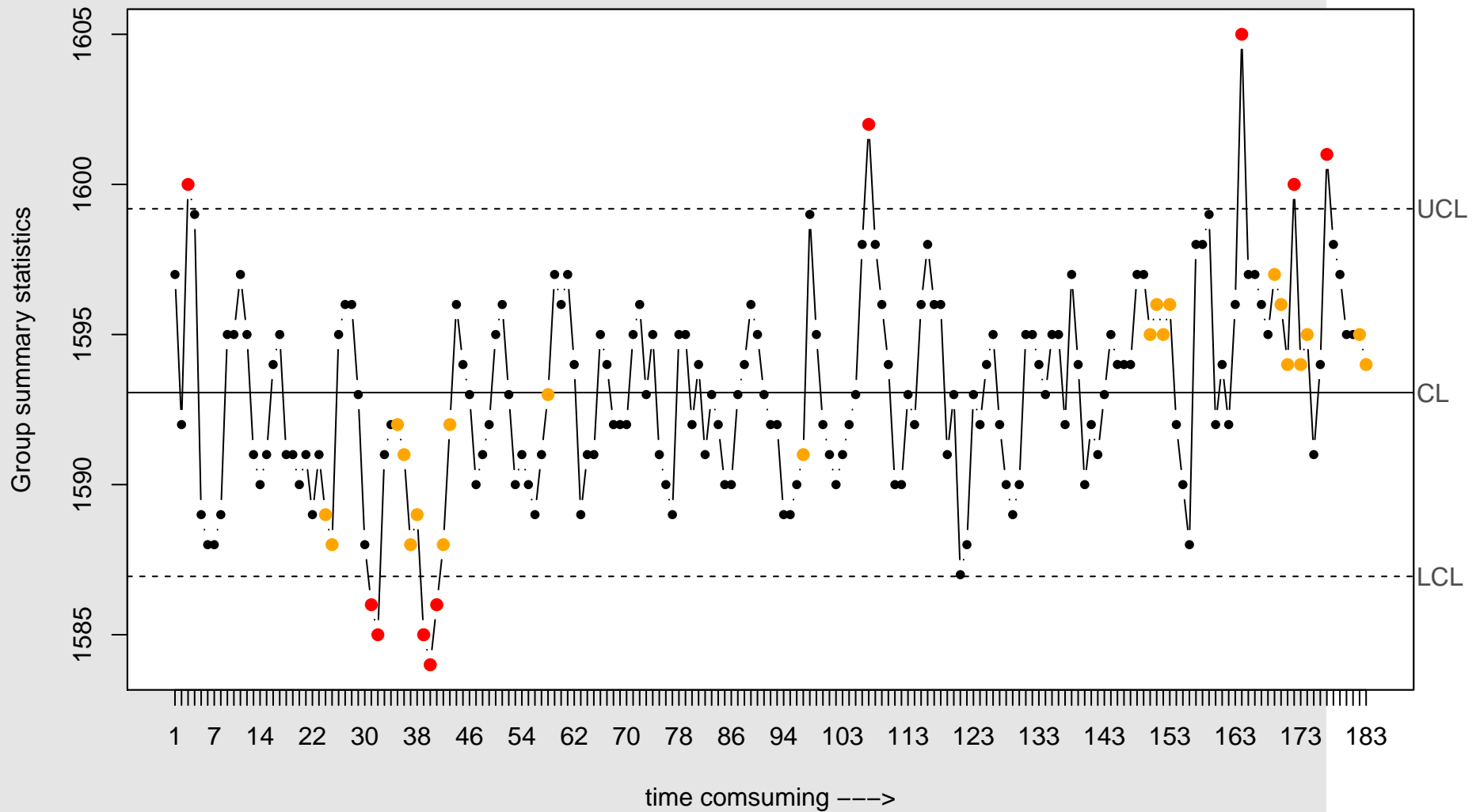
Number of groups = 183
Center = 1593.066
StdDev = 2.040955
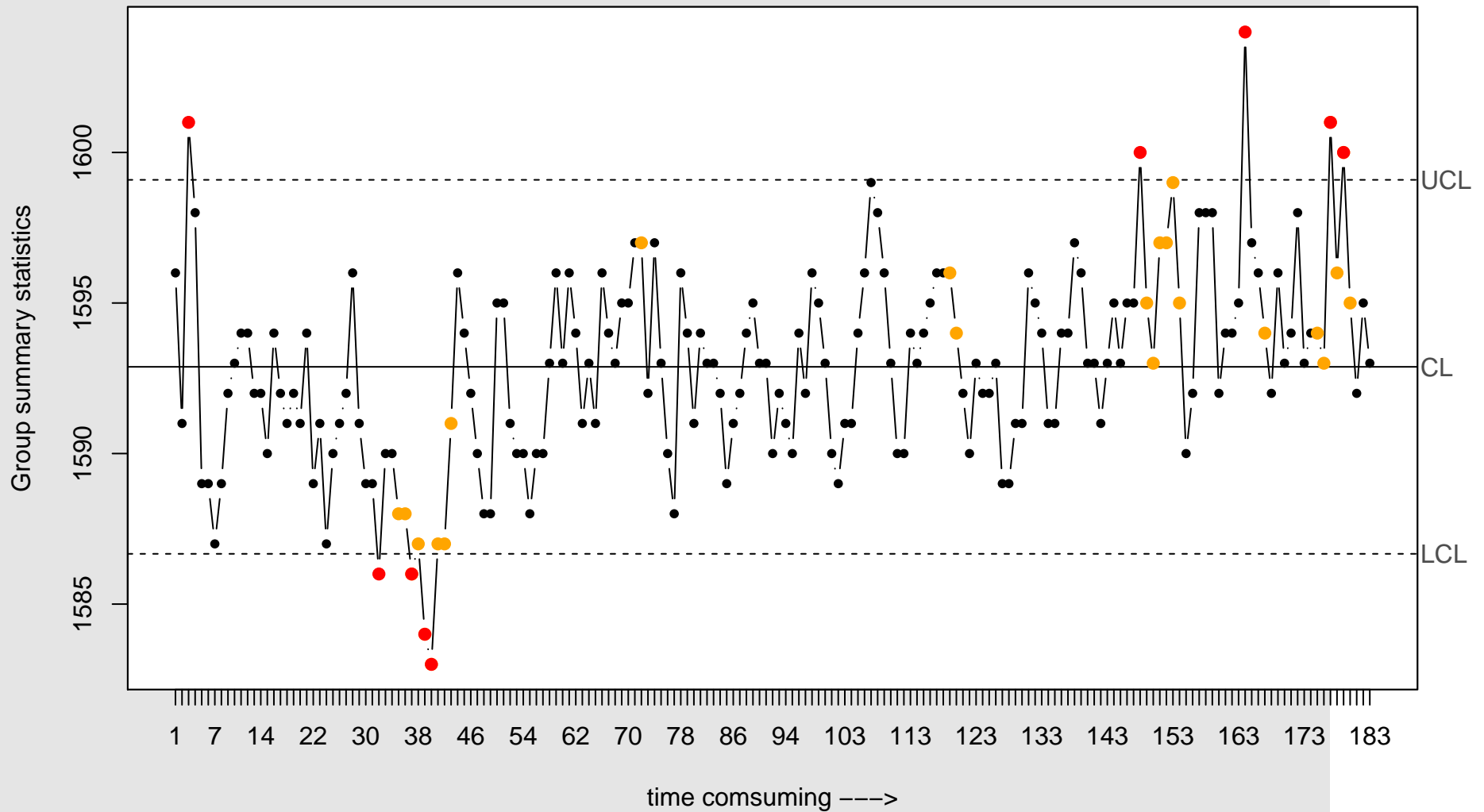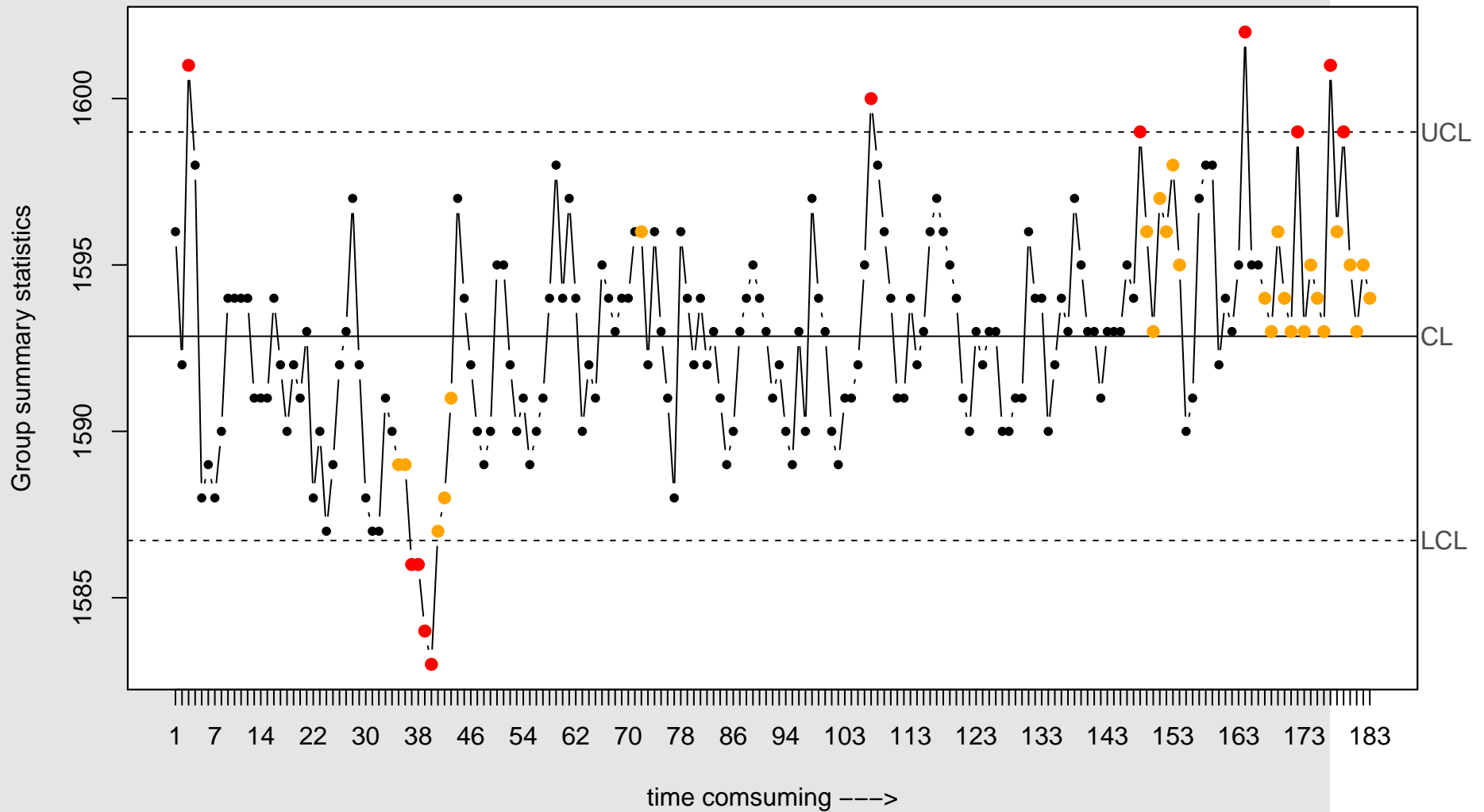
LCL = 1586.943
UCL = 1599.188

Number beyond limits = 10
Number violating runs = 25

218th column point of this product

Group summary statistics

time comsuming ---->
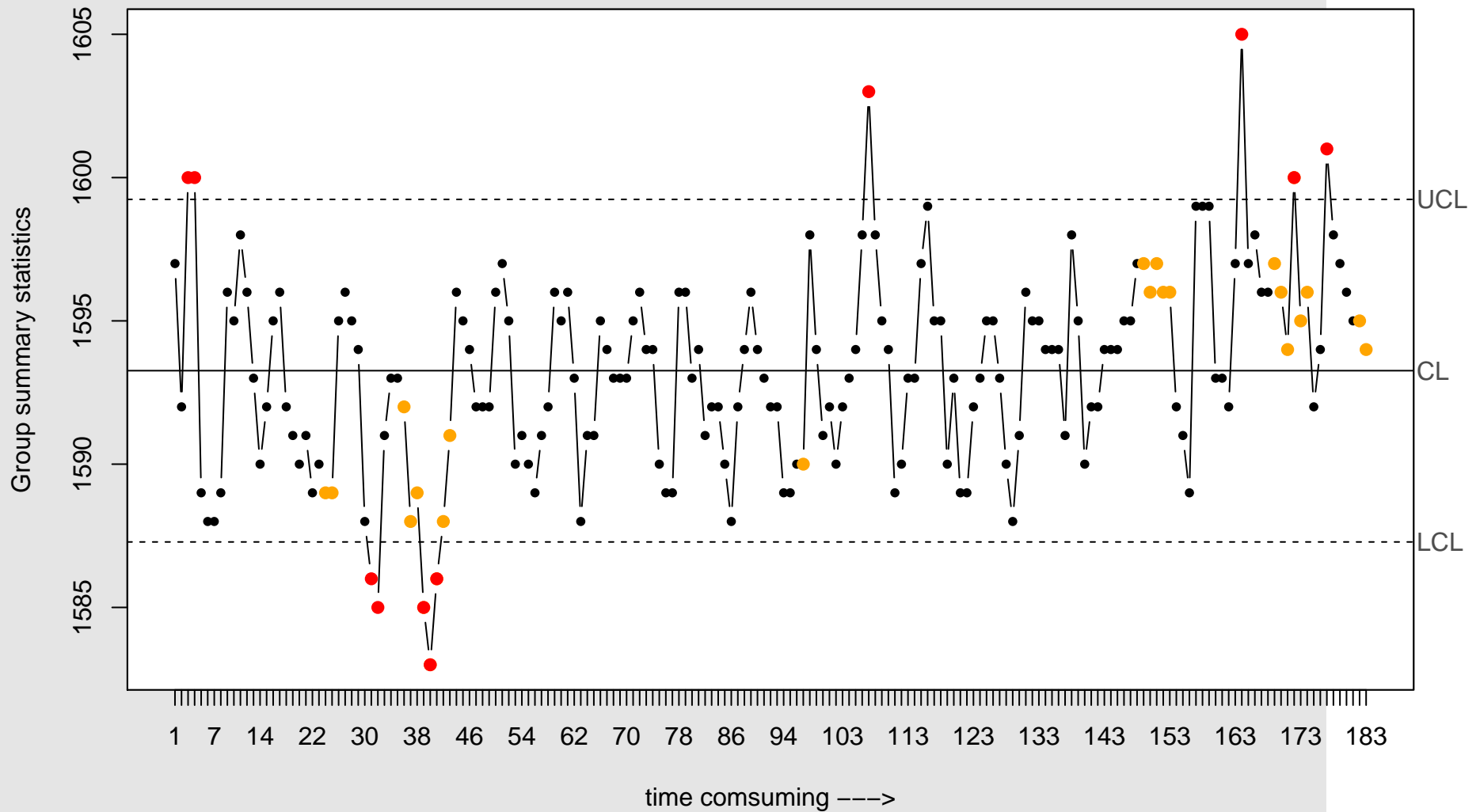
Number of groups = 183
Center = 1593.262   LCL = 1587.286   Number beyond limits = 11
StdDev = 1.992245   UCL = 1599.239   Number violating runs = 24

219th column point of this product

Group summary statistics

time comsuming --->
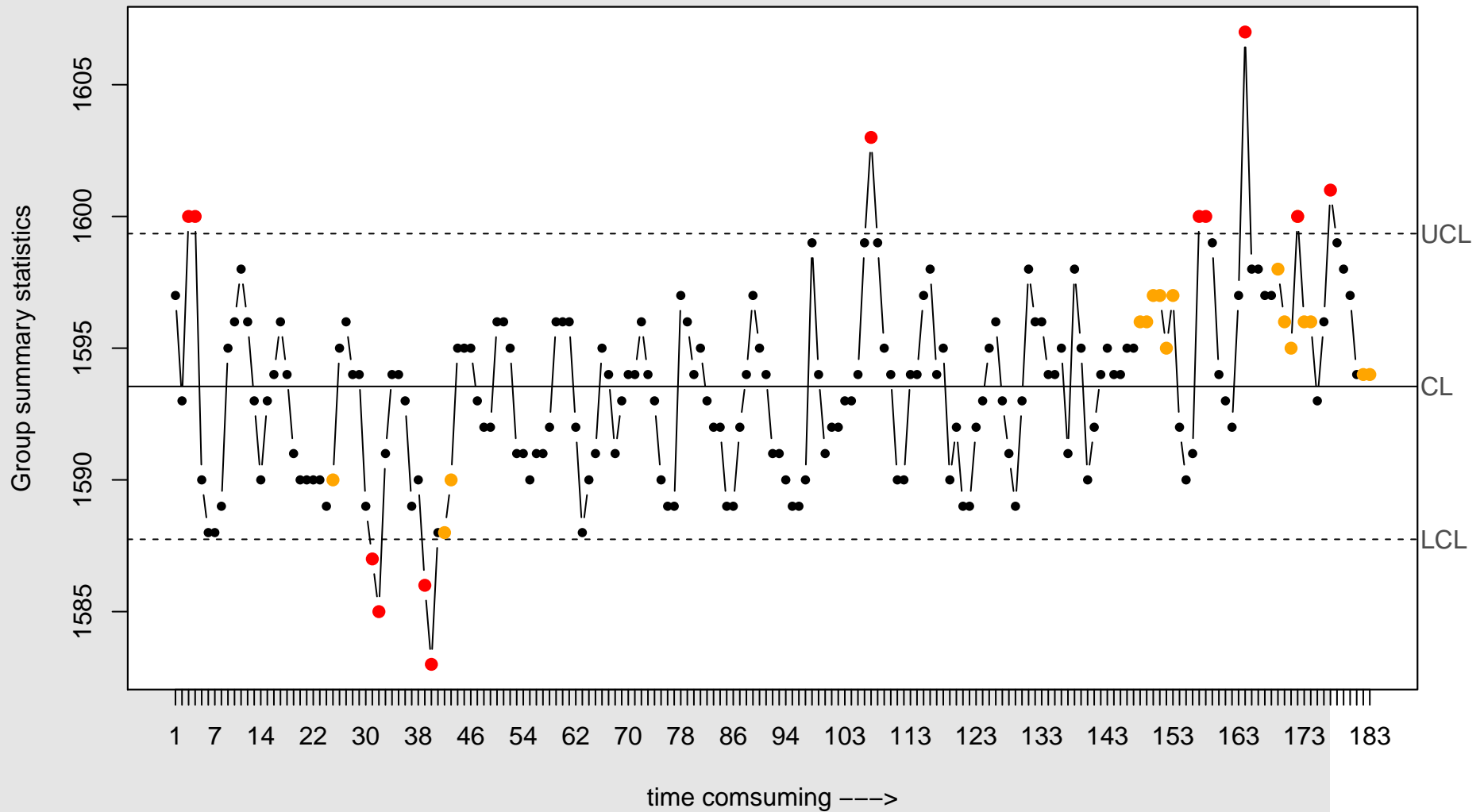
Number of groups = 183
Center = 1593.546   LCL = 1587.745   Number beyond limits = 12
StdDev = 1.933793   UCL = 1599.348   Number violating runs = 17

220th column point of this product

Group summary statistics

1605
1600 — UCL
1595 — CL
1590
1585 — LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ——>
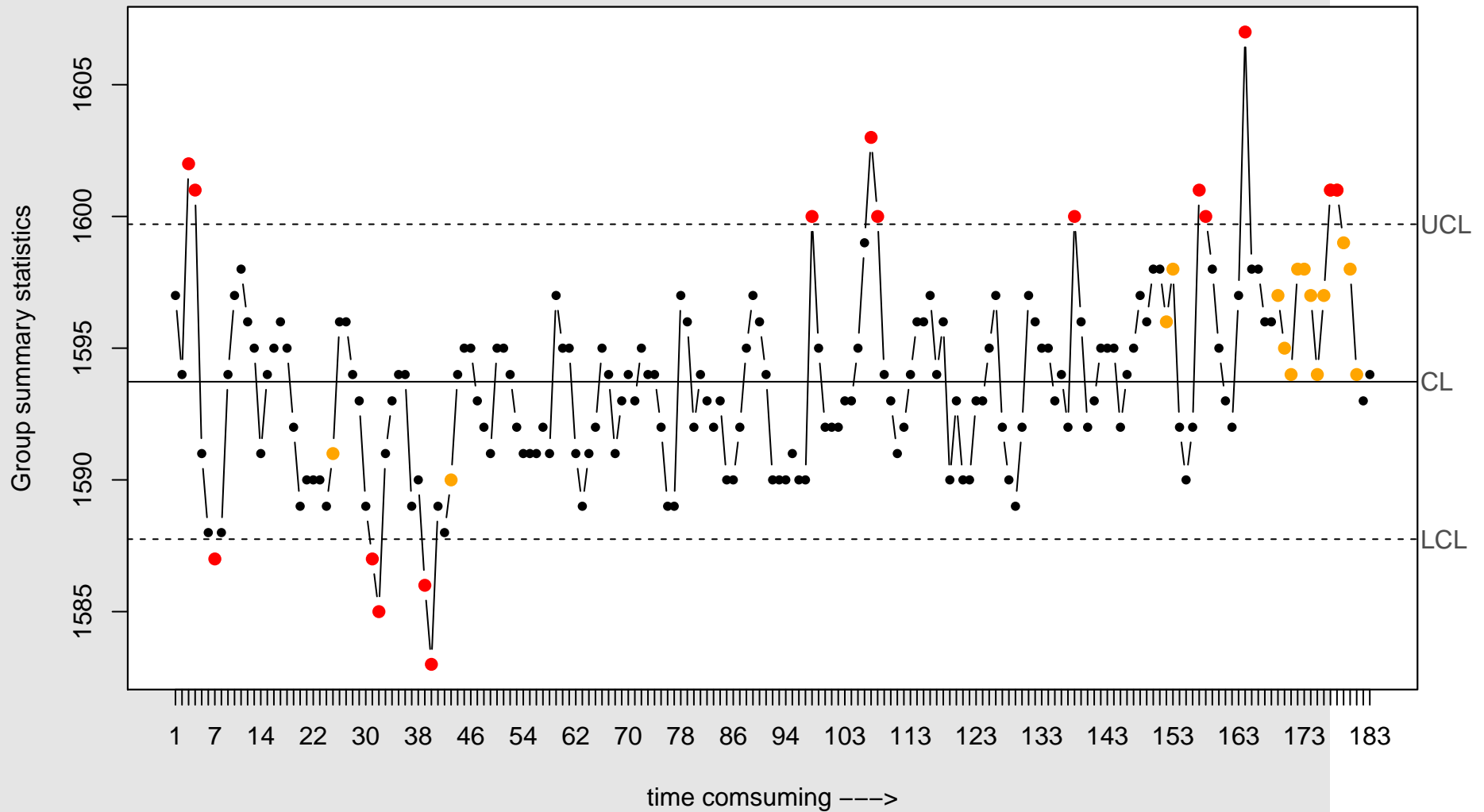
Number of groups = 183
Center = 1593.727   LCL = 1587.75   Number beyond limits = 16
StdDev = 1.992245   UCL = 1599.704   Number violating runs = 17

221th column point of this product

Group summary statistics

time comsuming --->
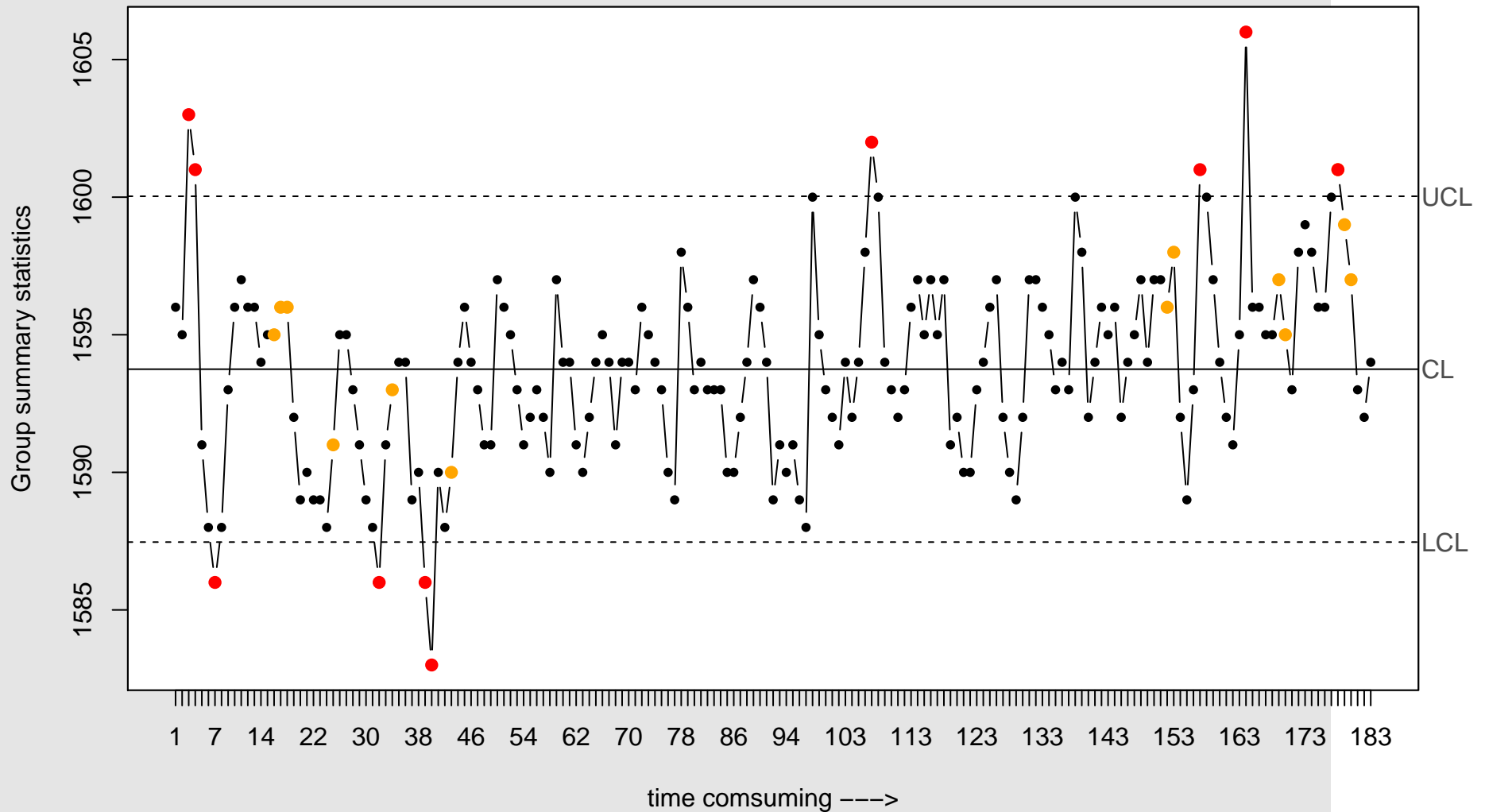
Number of groups = 183
Center = 1593.749
StdDev = 2.094537

LCL = 1587.465
UCL = 1600.032

Number beyond limits = 10
Number violating runs = 13

222th column point of this product

Group summary statistics

time comsuming ---->
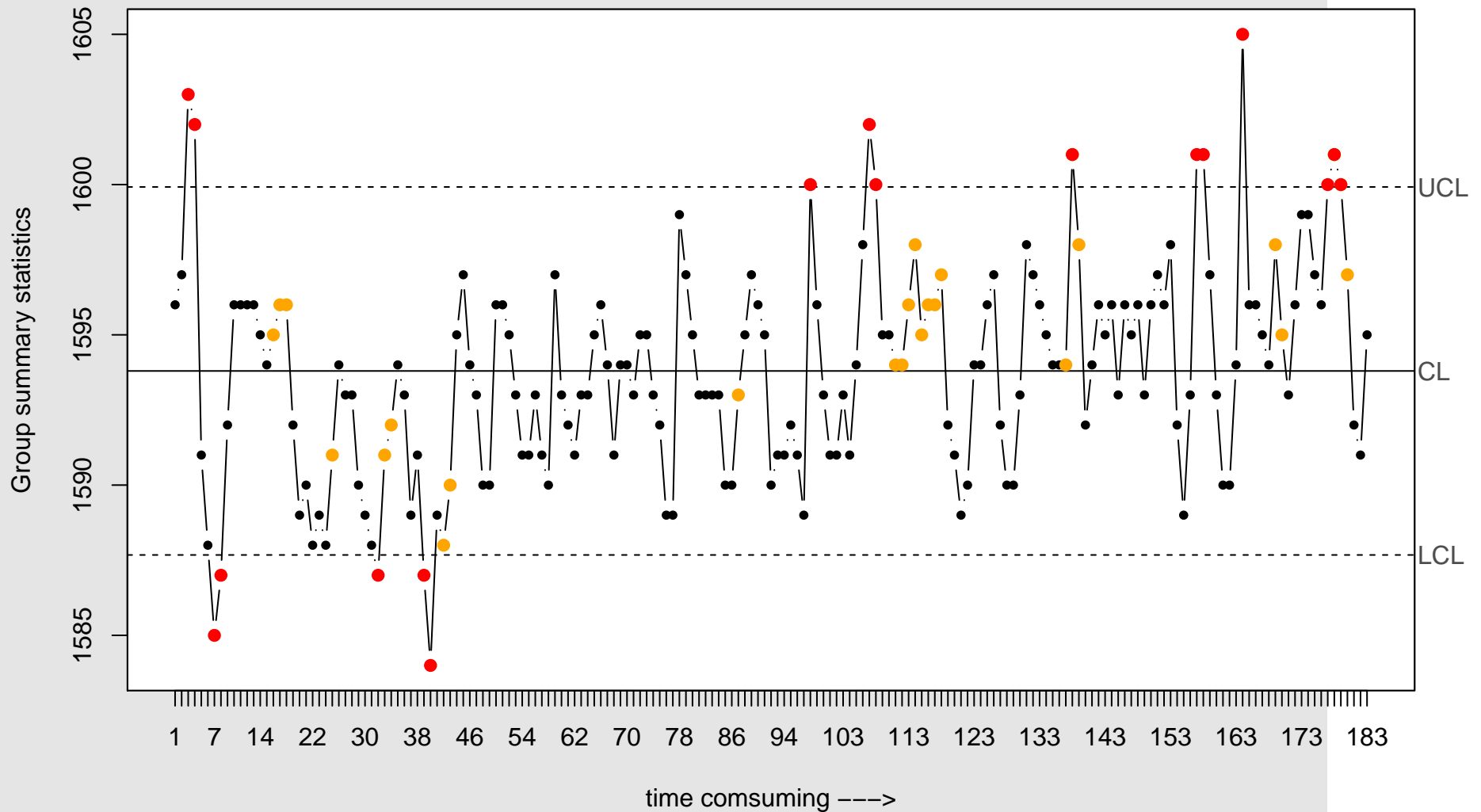
Number of groups = 183
Center = 1593.798   LCL = 1587.675   Number beyond limits = 17
StdDev = 2.040955   UCL = 1599.921   Number violating runs = 25

223th column point of this product

Group summary statistics

time comsuming ––––>
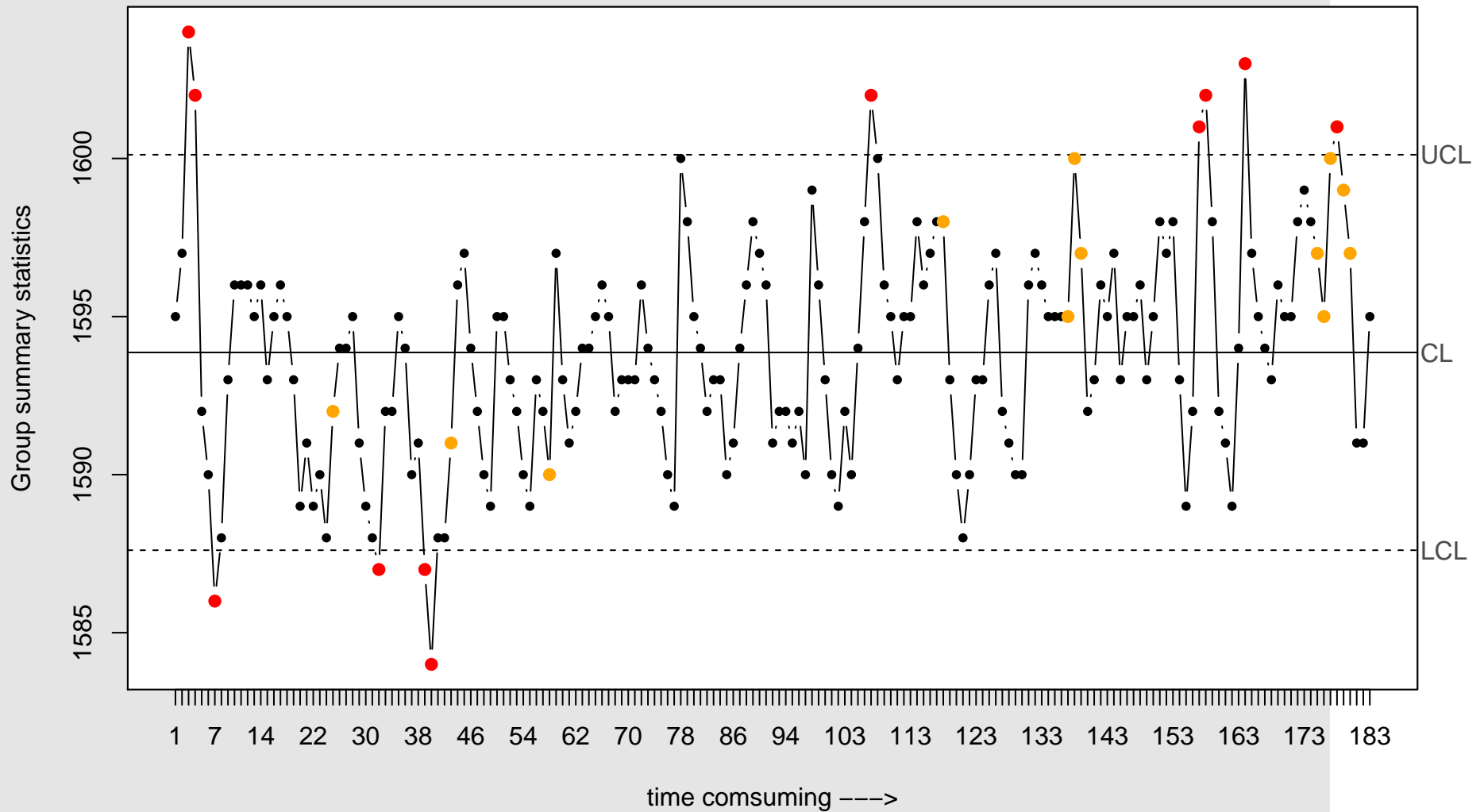
Number of groups = 183
Center = 1593.863
StdDev = 2.084795

LCL = 1587.609
UCL = 1600.118

Number beyond limits = 11
Number violating runs = 13

224th column point of this product

Group summary statistics

time comsuming ---->
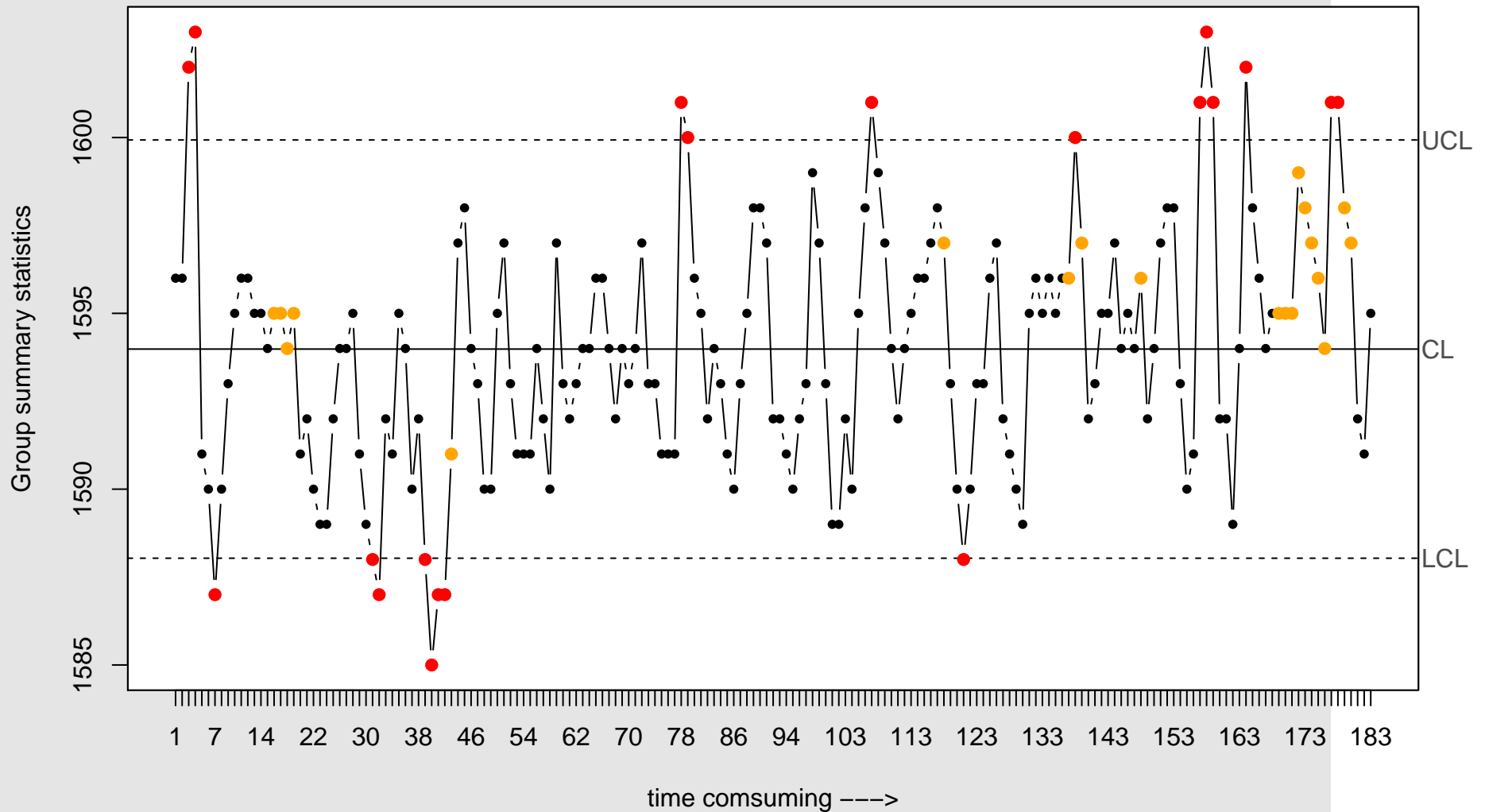
Number of groups = 183
Center = 1593.984   LCL = 1588.036   Number beyond limits = 20
StdDev = 1.982503   UCL = 1599.931   Number violating runs = 22

225th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ––––>

Number of groups = 183
Center = 1594   LCL = 1588.286   Number beyond limits = 18
StdDev = 1.904567   UCL = 1599.714   Number violating runs = 14

226th column point of this product

Group summary statistics

time comsuming --->
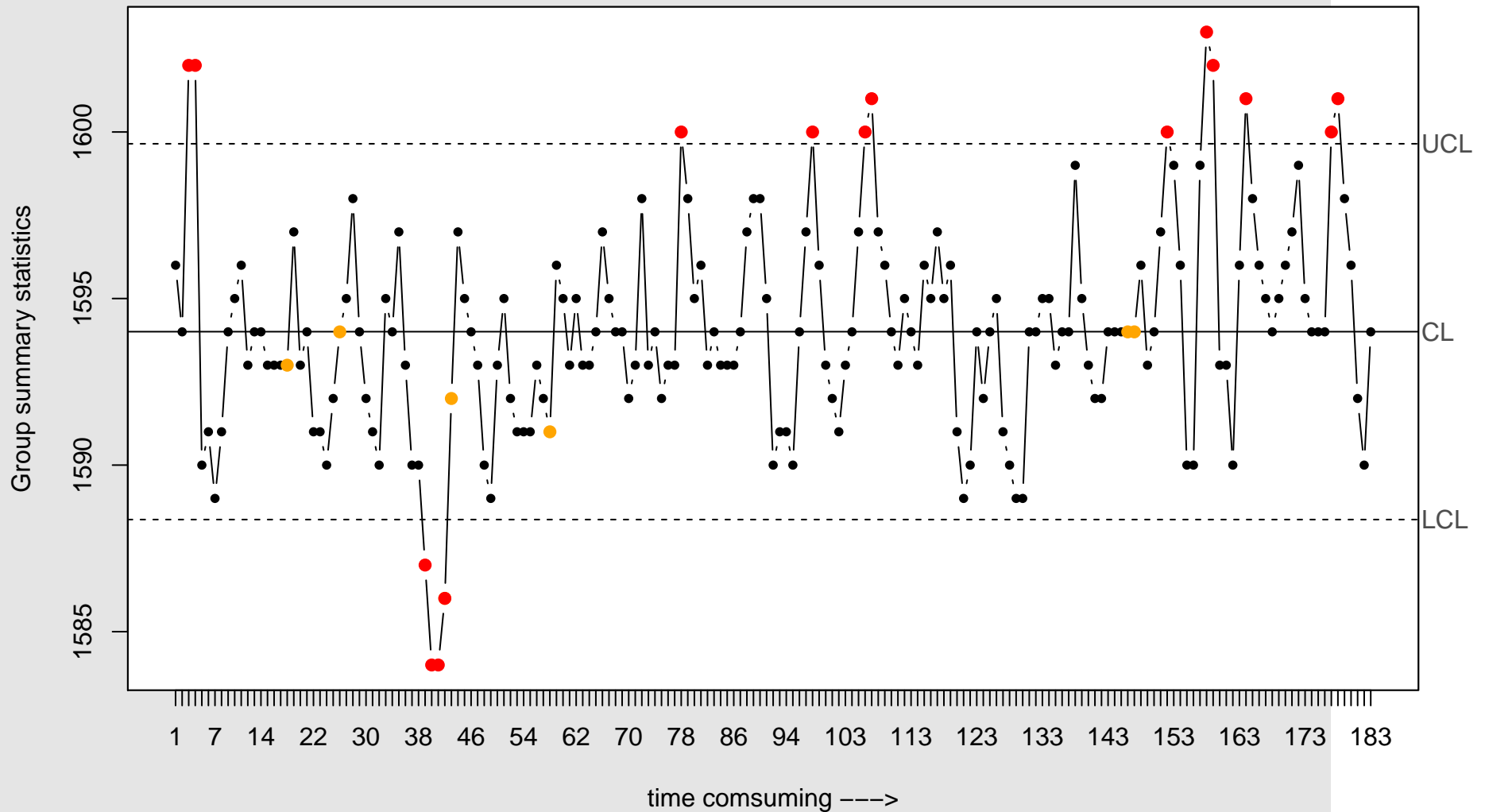
Number of groups = 183
Center = 1594.005   LCL = 1588.365   Number beyond limits = 16
StdDev = 1.880212   UCL = 1599.646   Number violating runs = 7

227th column point of this product

Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1594.066
StdDev = 1.889954
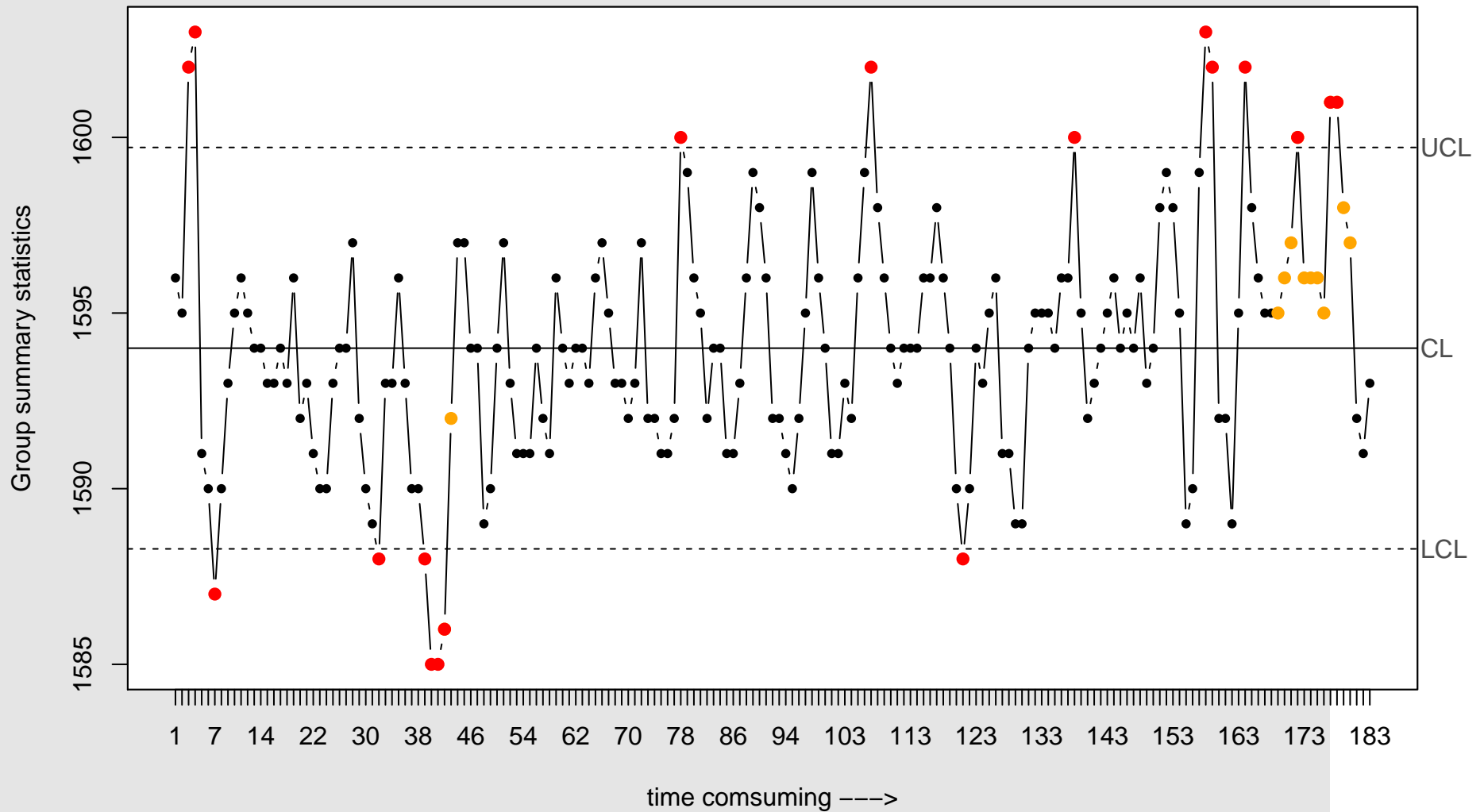
LCL = 1588.396
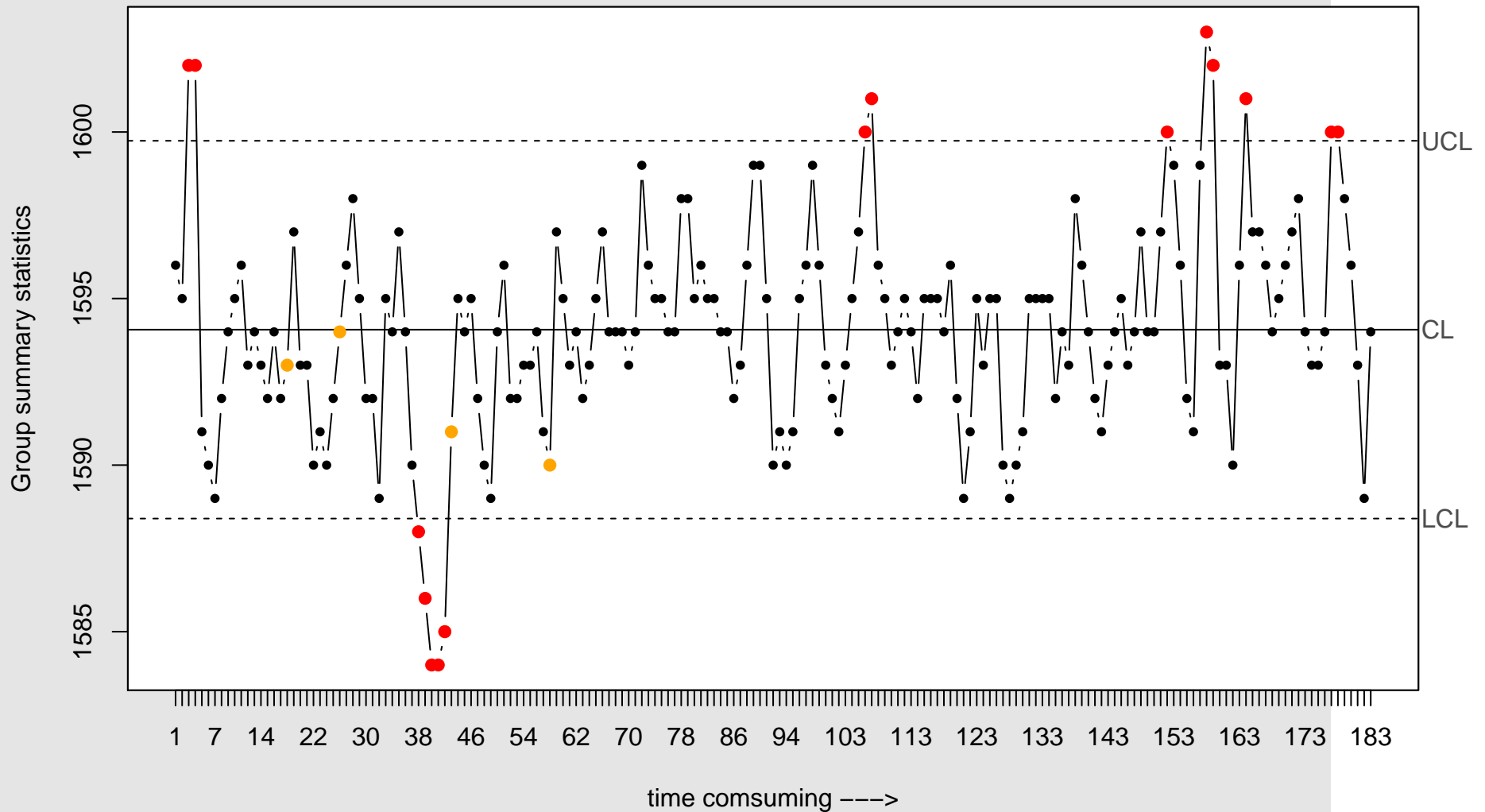UCL = 1599.735

Number beyond limits = 15
Number violating runs = 5

228th column point of this product

Group summary statistics

time comsuming –––>

UCL

CL

LCL
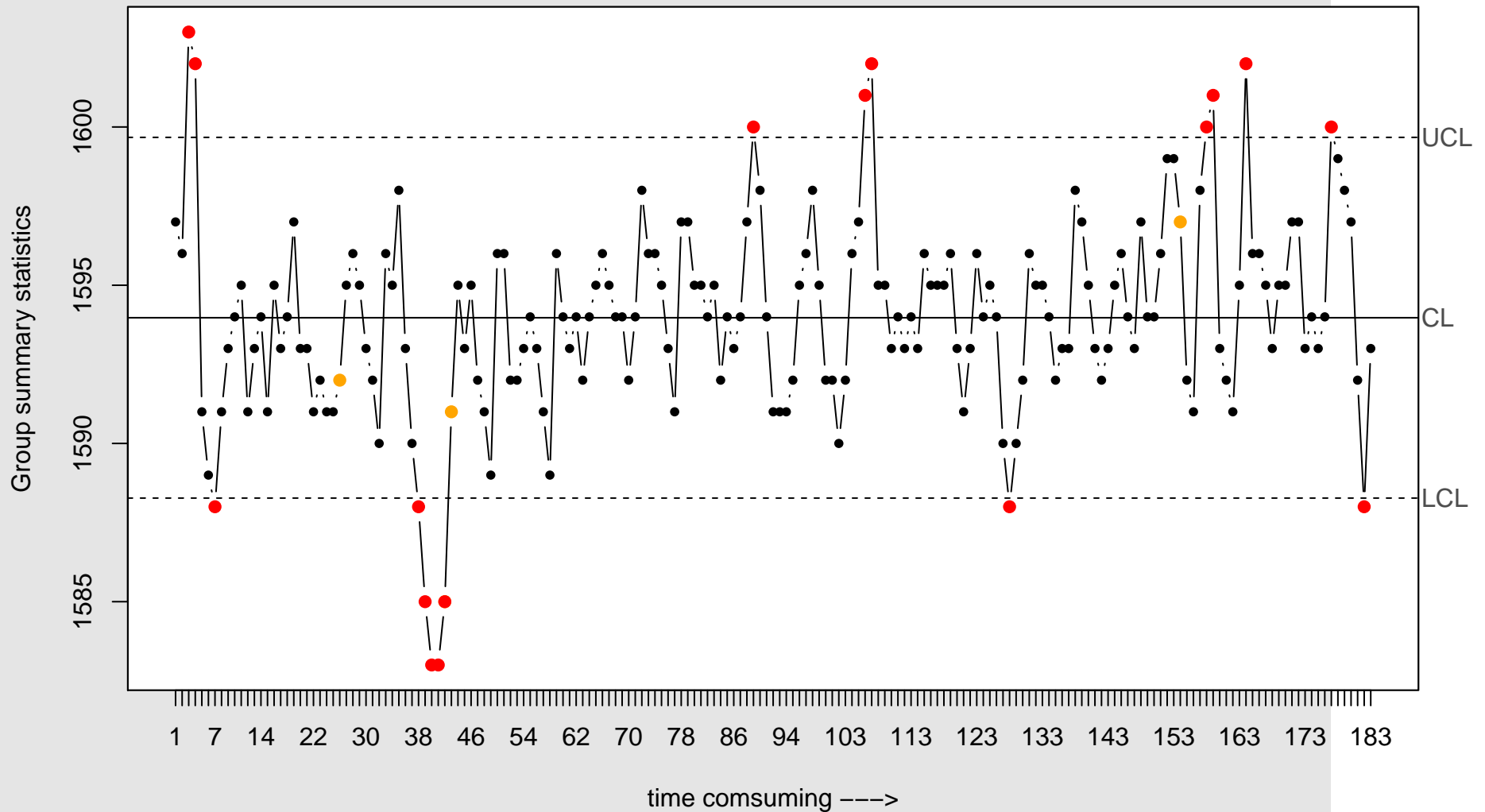
Number of groups = 183
Center = 1593.973   LCL = 1588.274   Number beyond limits = 17
StdDev = 1.899696   UCL = 1599.672   Number violating runs = 4

229th column point of this product

Group summary statistics

time comsuming ---->

UCL

CL

LCL
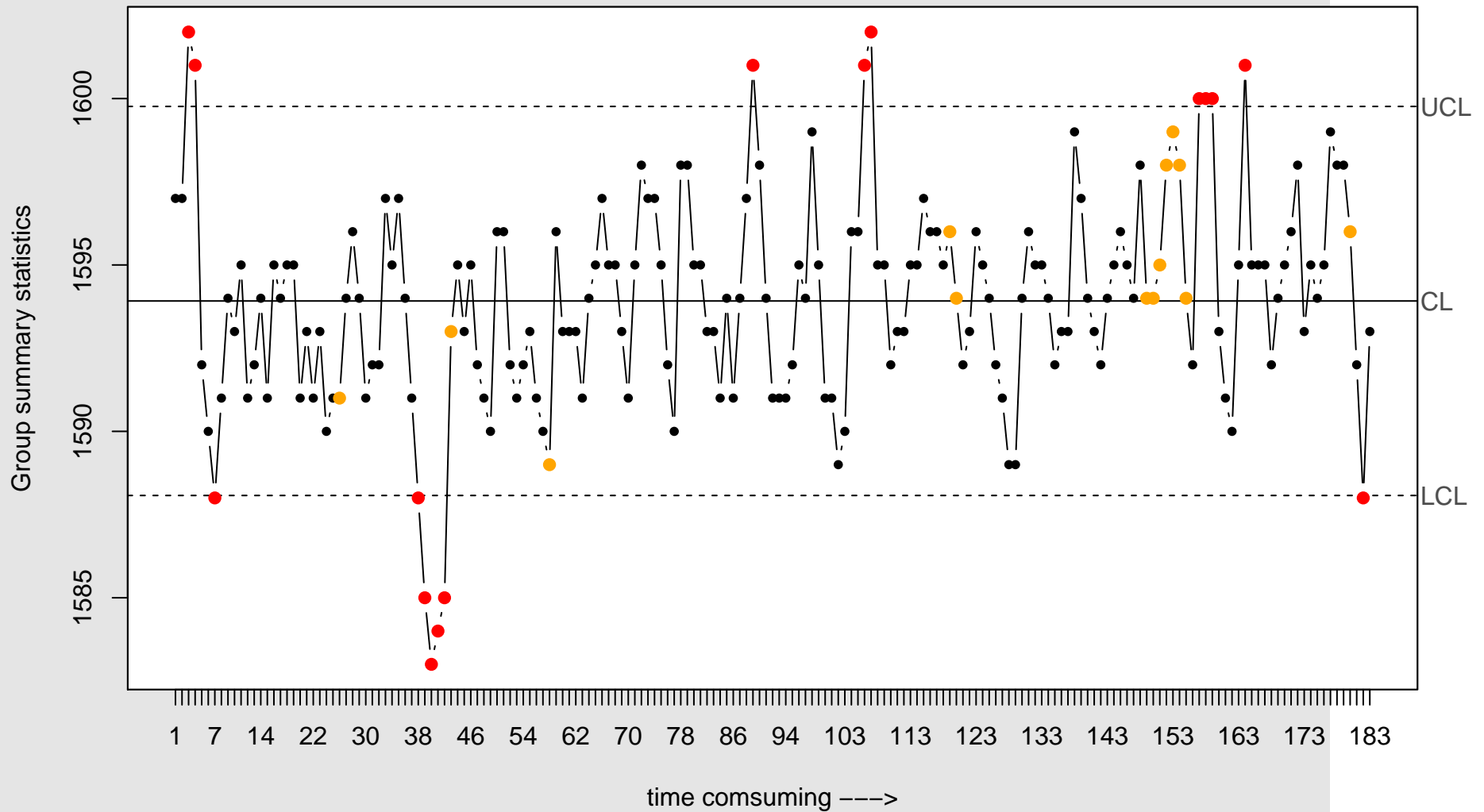
Number of groups = 183
Center = 1593.918   LCL = 1588.073   Number beyond limits = 16
StdDev = 1.948406   UCL = 1599.763   Number violating runs = 13

230th column point of this product

Group summary statistics

time comsuming ––––>
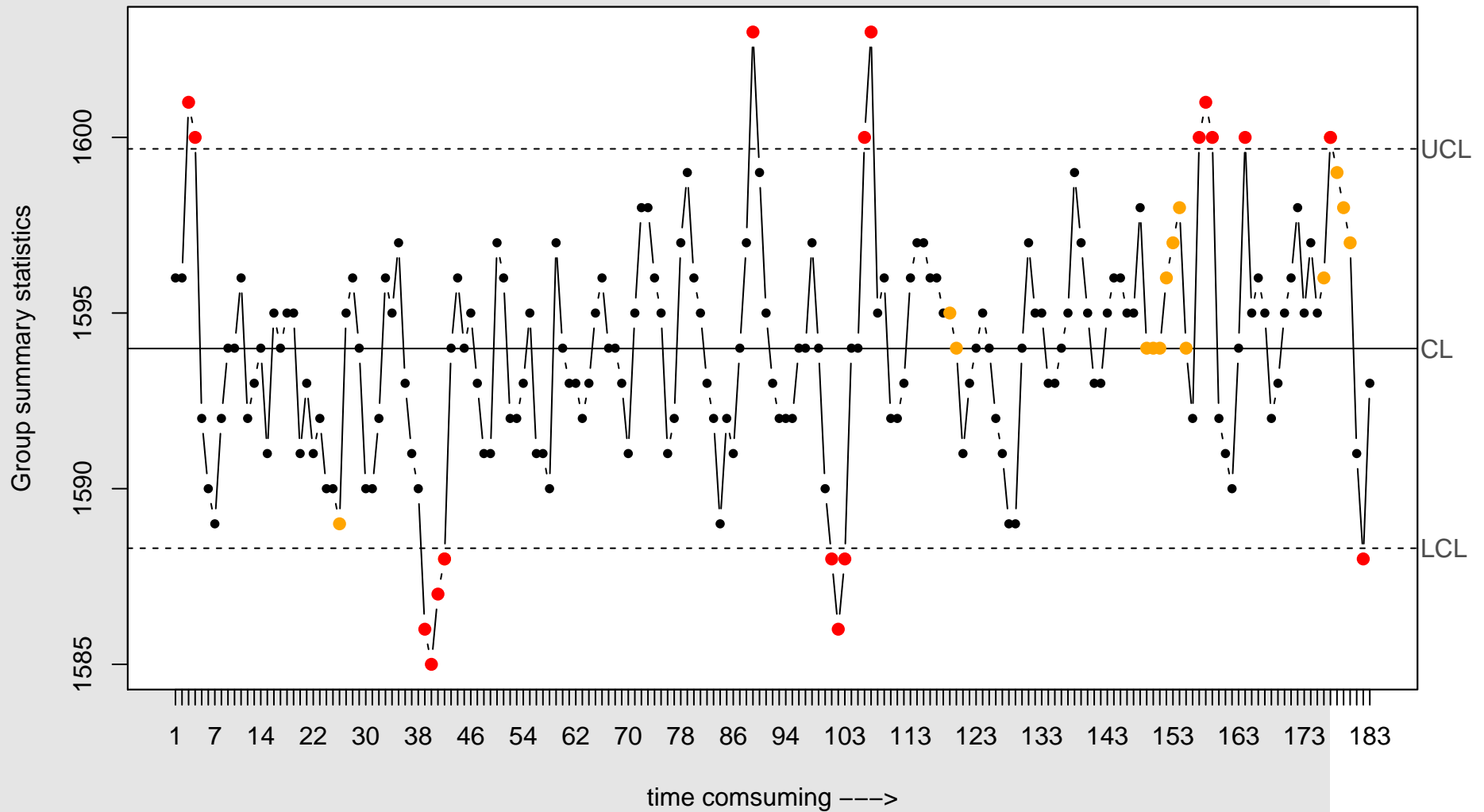
Number of groups = 183
Center = 1593.989   LCL = 1588.305   Number beyond limits = 18
StdDev = 1.894825   UCL = 1599.674   Number violating runs = 16

231th column point of this product

Number of groups = 183
Center = 1594.148   LCL = 1588.302   Number beyond limits = 18
StdDev = 1.948406   UCL = 1599.993   Number violating runs = 6

232th column point of this product

Group summary statistics

time comsuming ---->
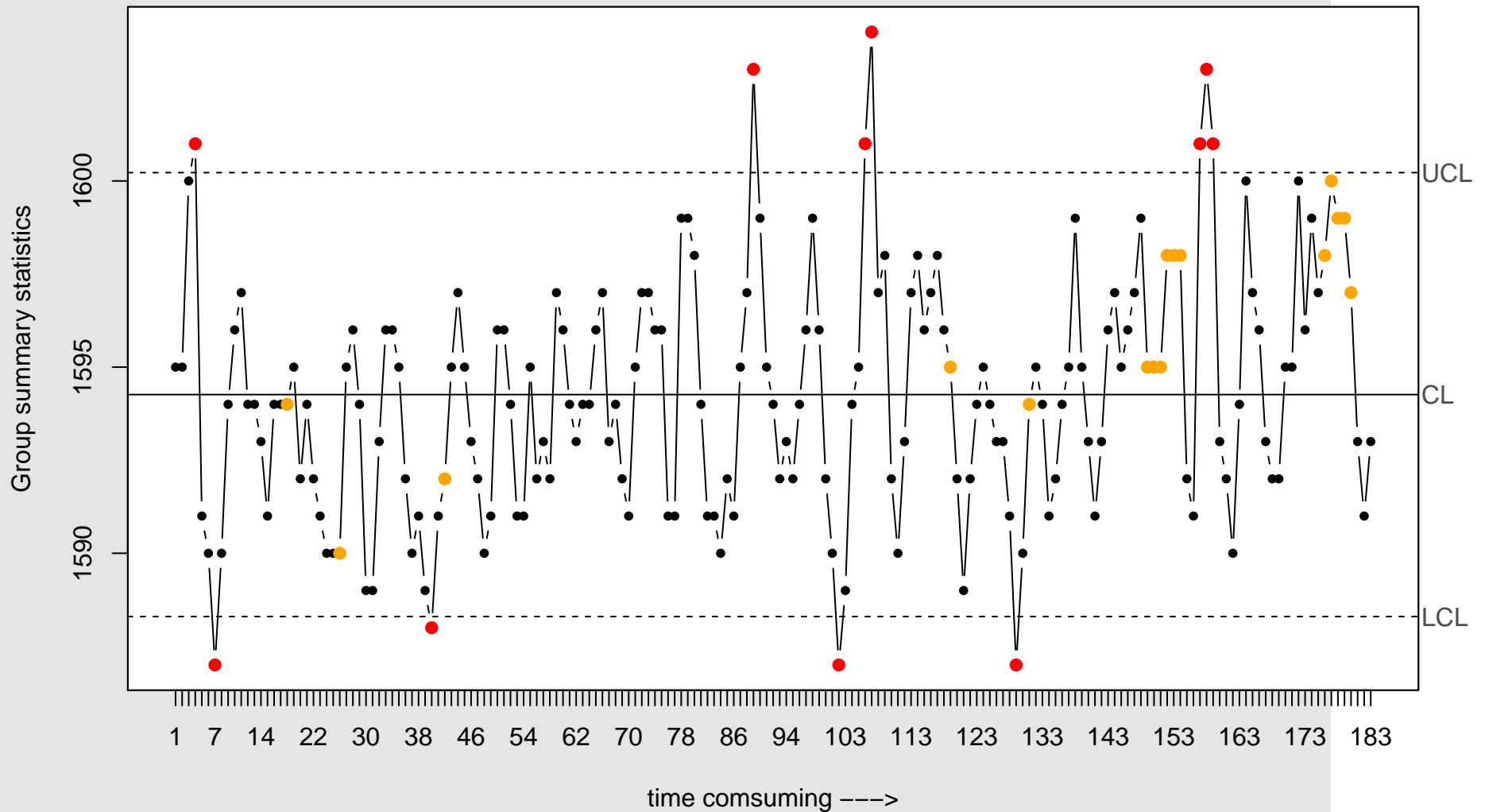
Number of groups = 183
Center = 1594.262
StdDev = 1.987374
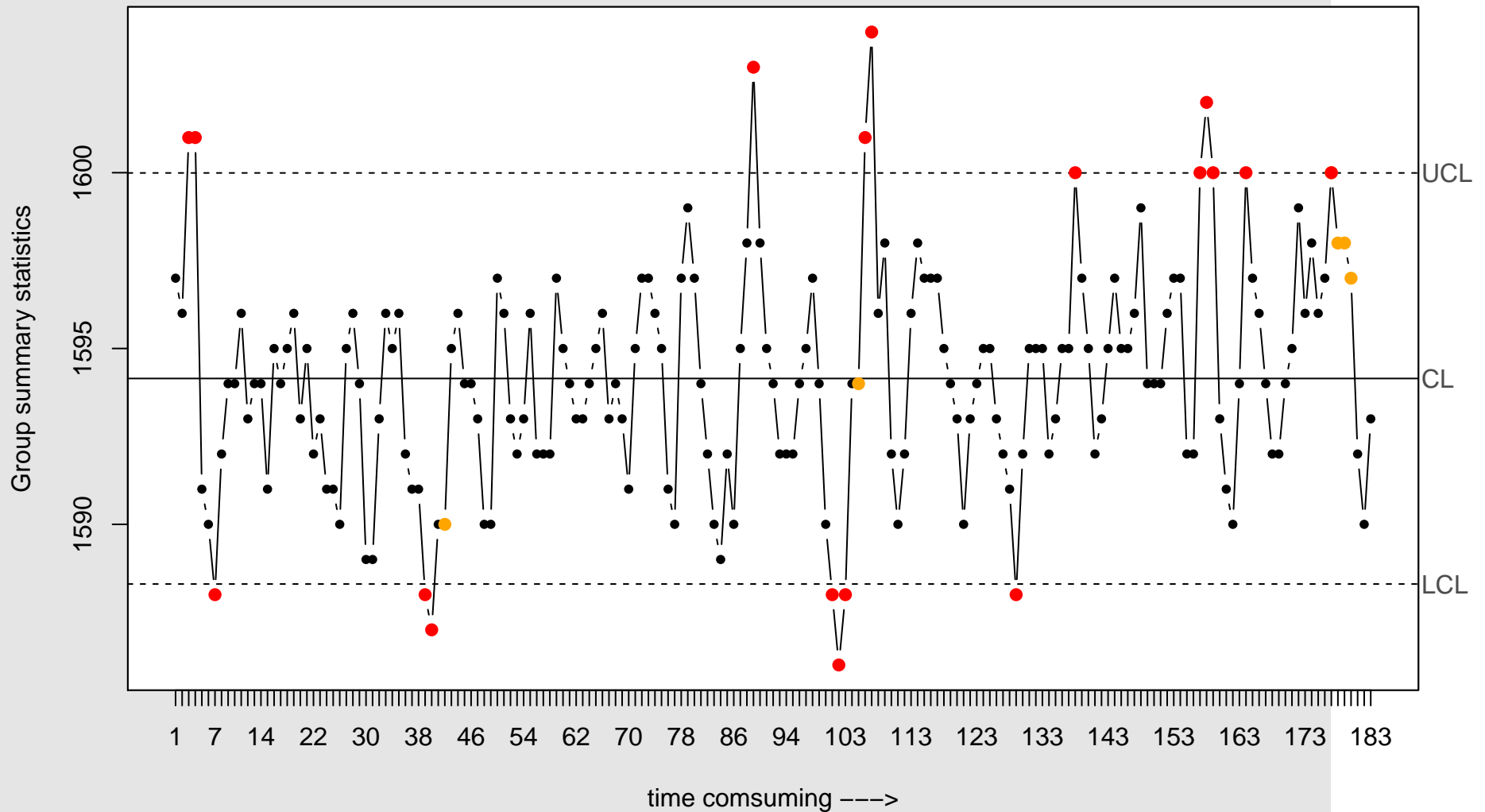
LCL = 1588.3
UCL = 1600.224

Number beyond limits = 11
Number violating runs = 16

233th column point of this product

Group summary statistics

UCL

CL

LCL

1600

1595

1590

time comsuming –––>

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183
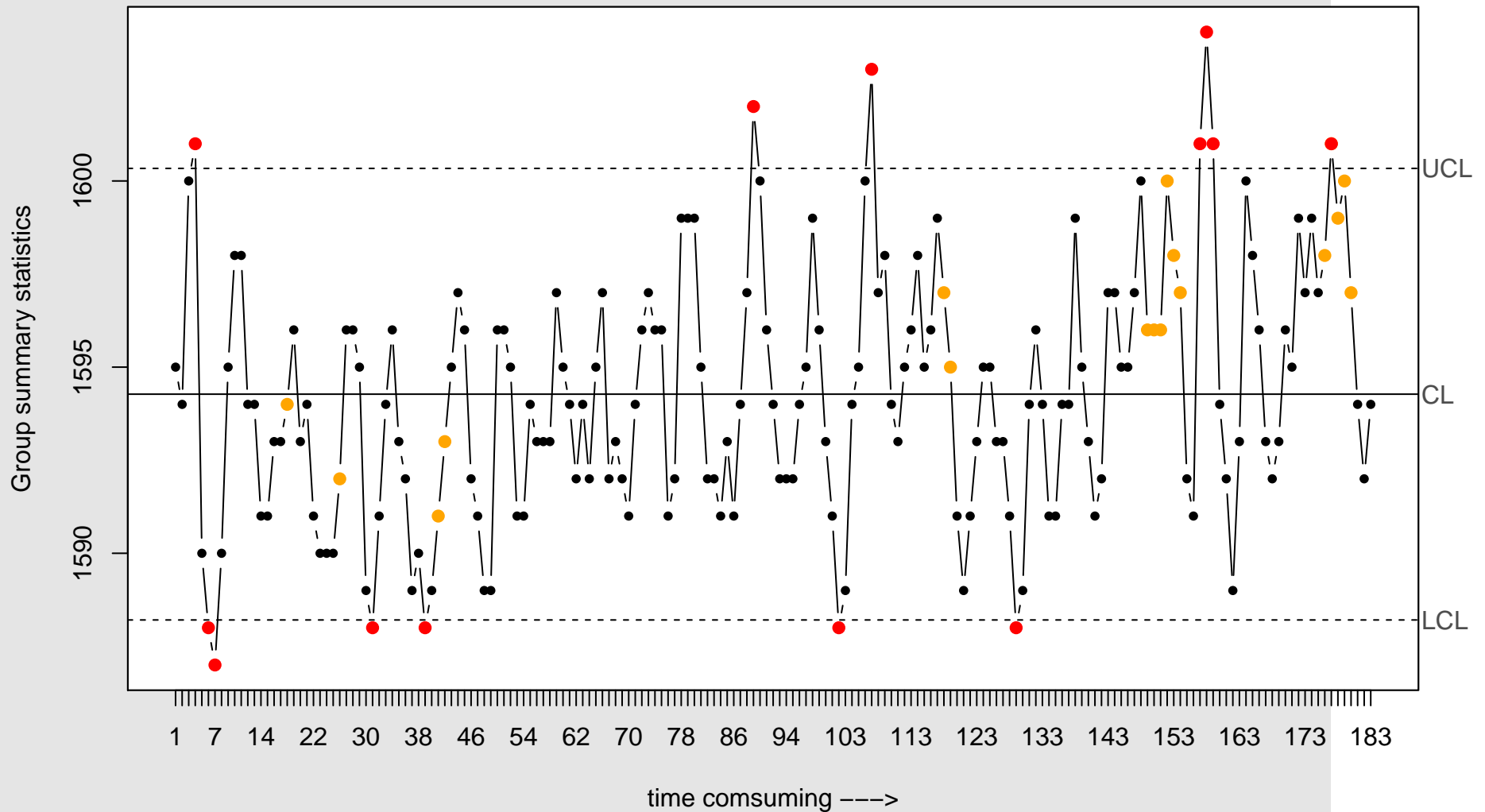
Number of groups = 183
Center = 1594.273   LCL = 1588.209   Number beyond limits = 13
StdDev = 2.021471   UCL = 1600.338   Number violating runs = 17

234th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ----->

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183
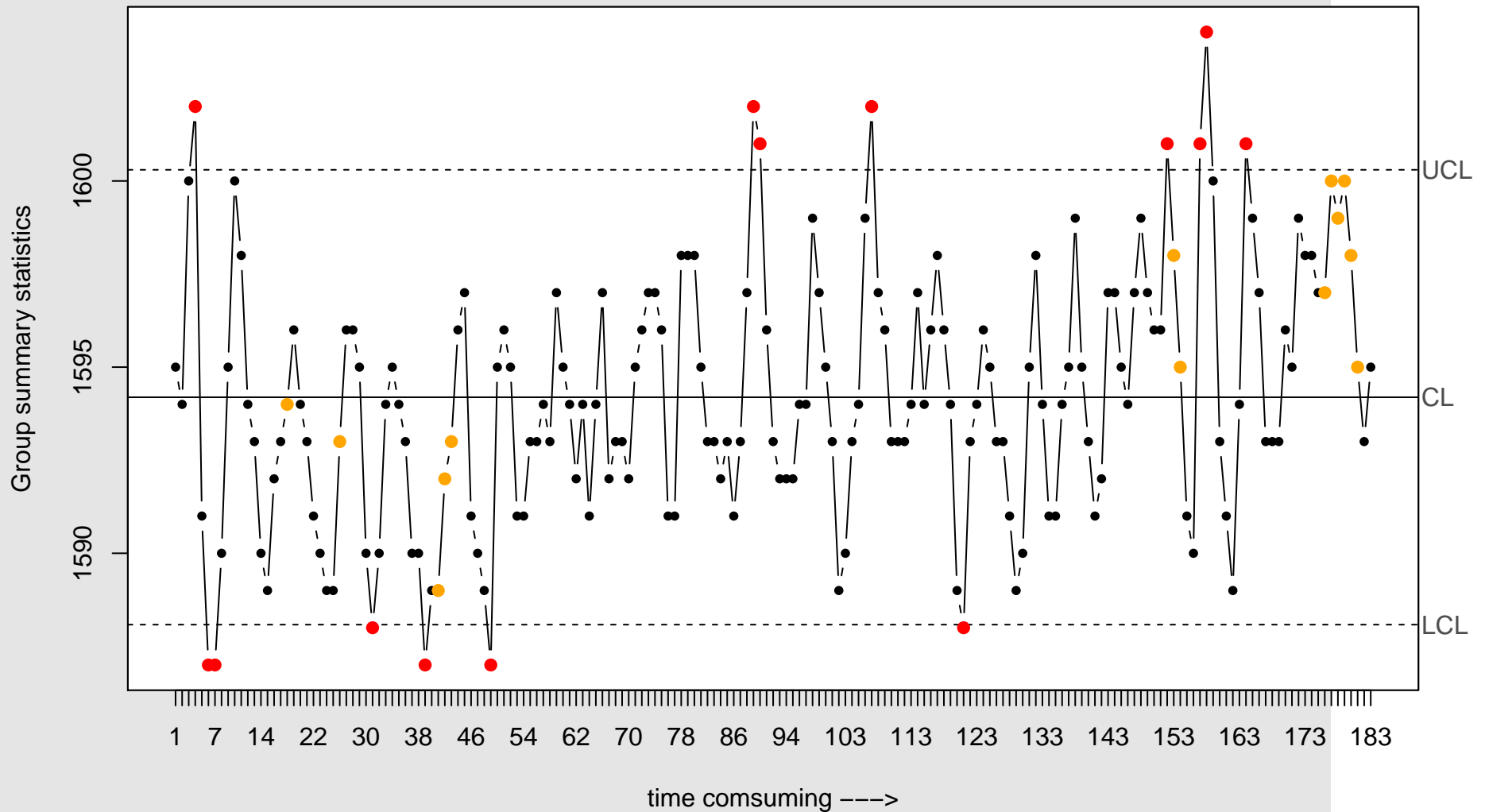
Number of groups = 183
Center = 1594.191   LCL = 1588.083   Number beyond limits = 14
StdDev = 2.036084   UCL = 1600.3   Number violating runs = 13

235th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1594.142   LCL = 1587.771   Number beyond limits = 12
StdDev = 2.123763   UCL = 1600.513   Number violating runs = 13

236th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1594.224   LCL = 1587.809   Number beyond limits = 14
StdDev = 2.138376   UCL = 1600.639   Number violating runs = 12

237th column point of this product

Group summary statistics

time comsuming ---->
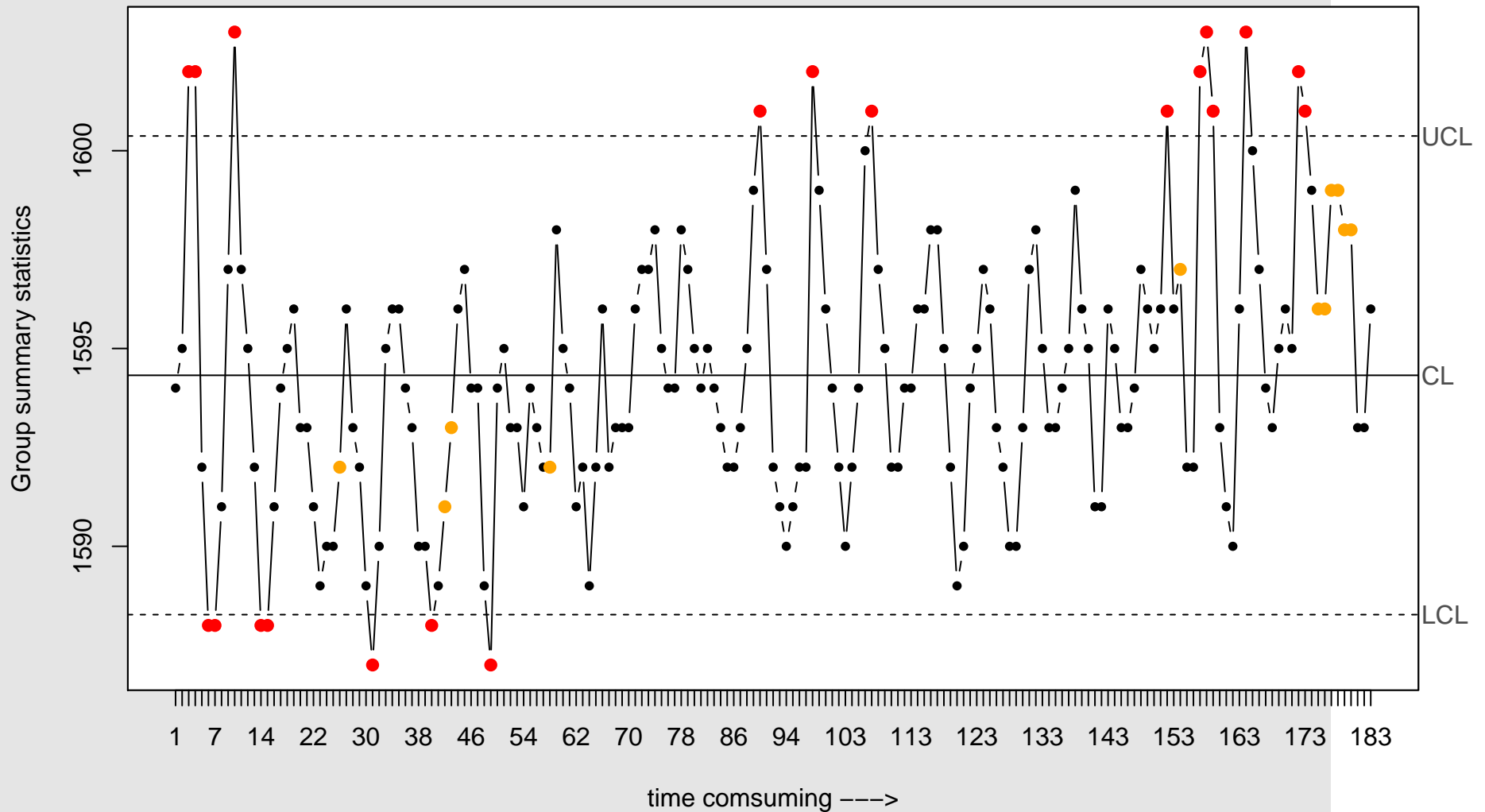
Number of groups = 183
Center = 1594.322
StdDev = 2.0166
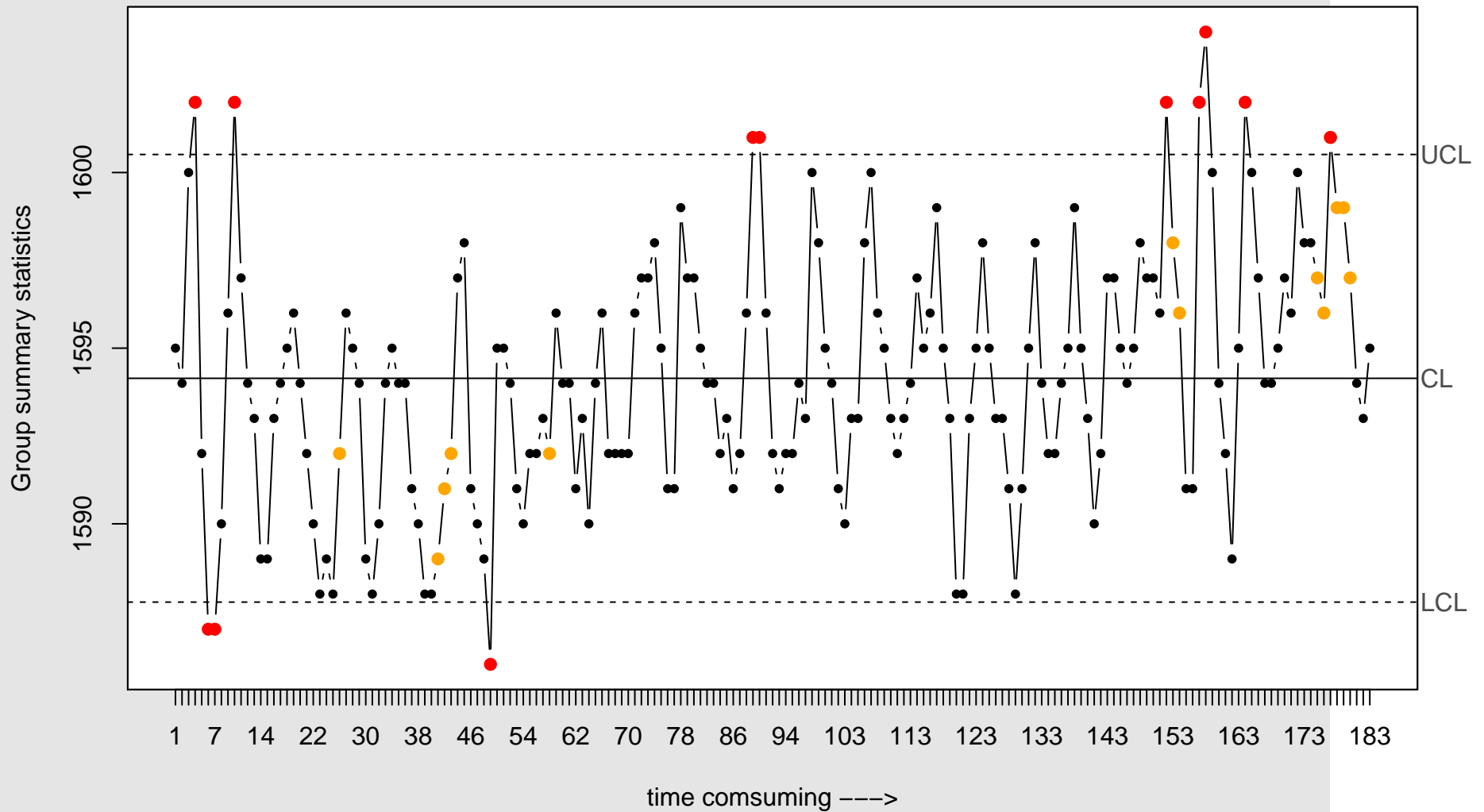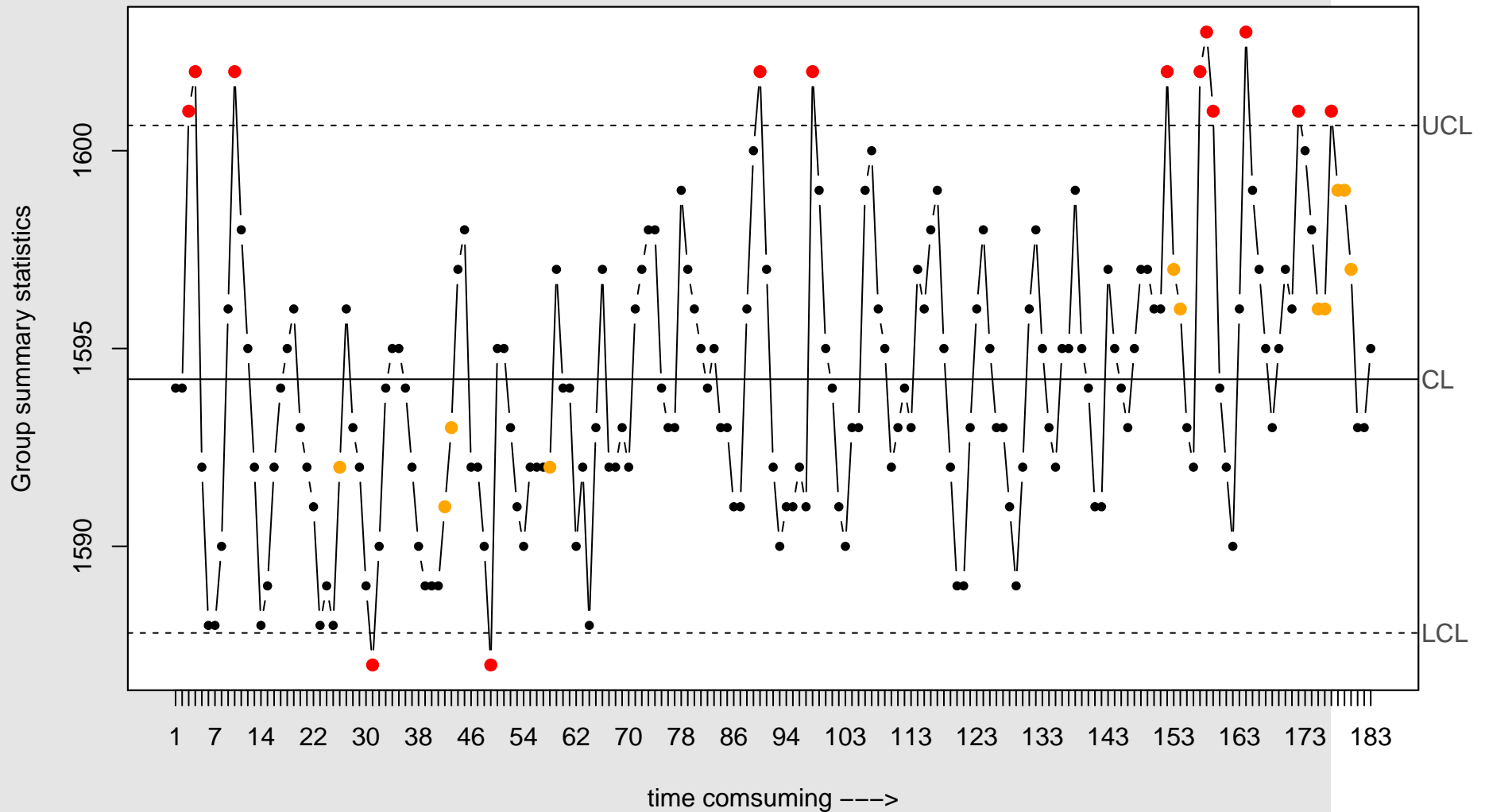
LCL = 1588.273
UCL = 1600.372

Number beyond limits = 20
Number violating runs = 11

238th column point of this product

Group summary statistics

time comsuming --->
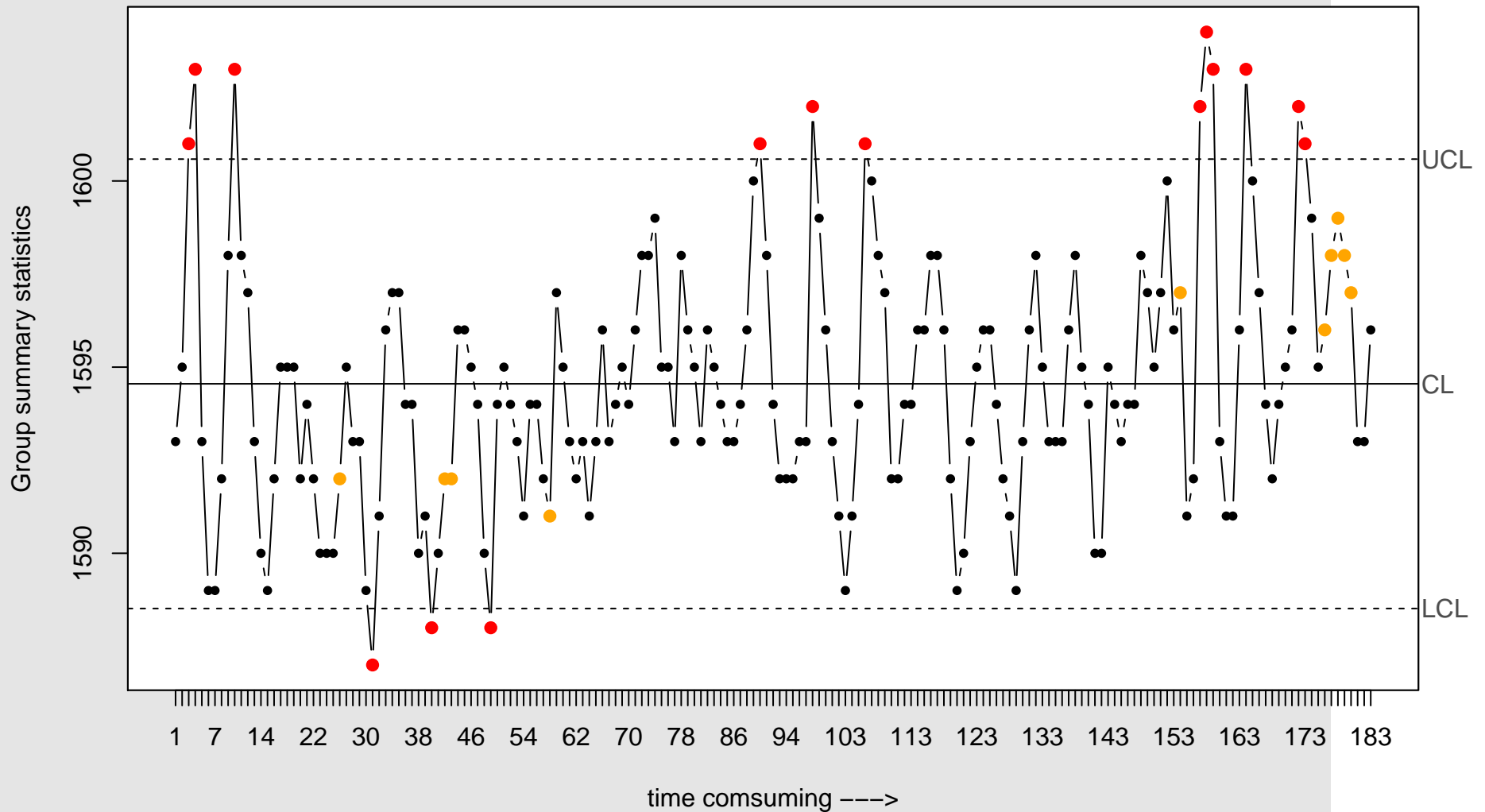
Number of groups = 183
Center = 1594.552   LCL = 1588.517   Number beyond limits = 15
StdDev = 2.011729   UCL = 1600.587   Number violating runs = 10

239th column point of this product

Group summary statistics

time comsuming ––––>
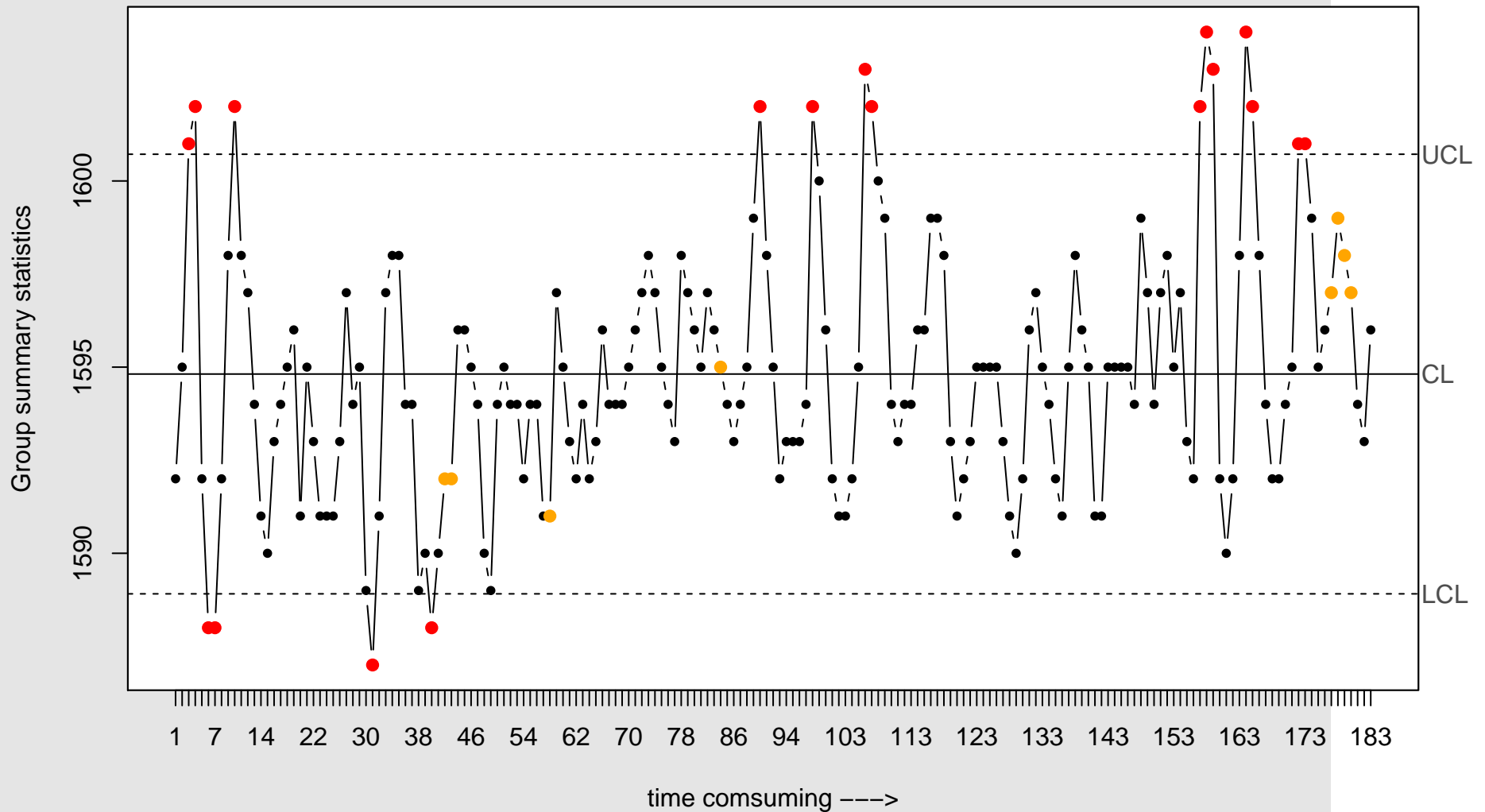
Number of groups = 183
Center = 1594.814   LCL = 1588.911   Number beyond limits = 18
StdDev = 1.96789   UCL = 1600.718   Number violating runs = 8

240th column point of this product

Group summary statistics

time comsuming ---->
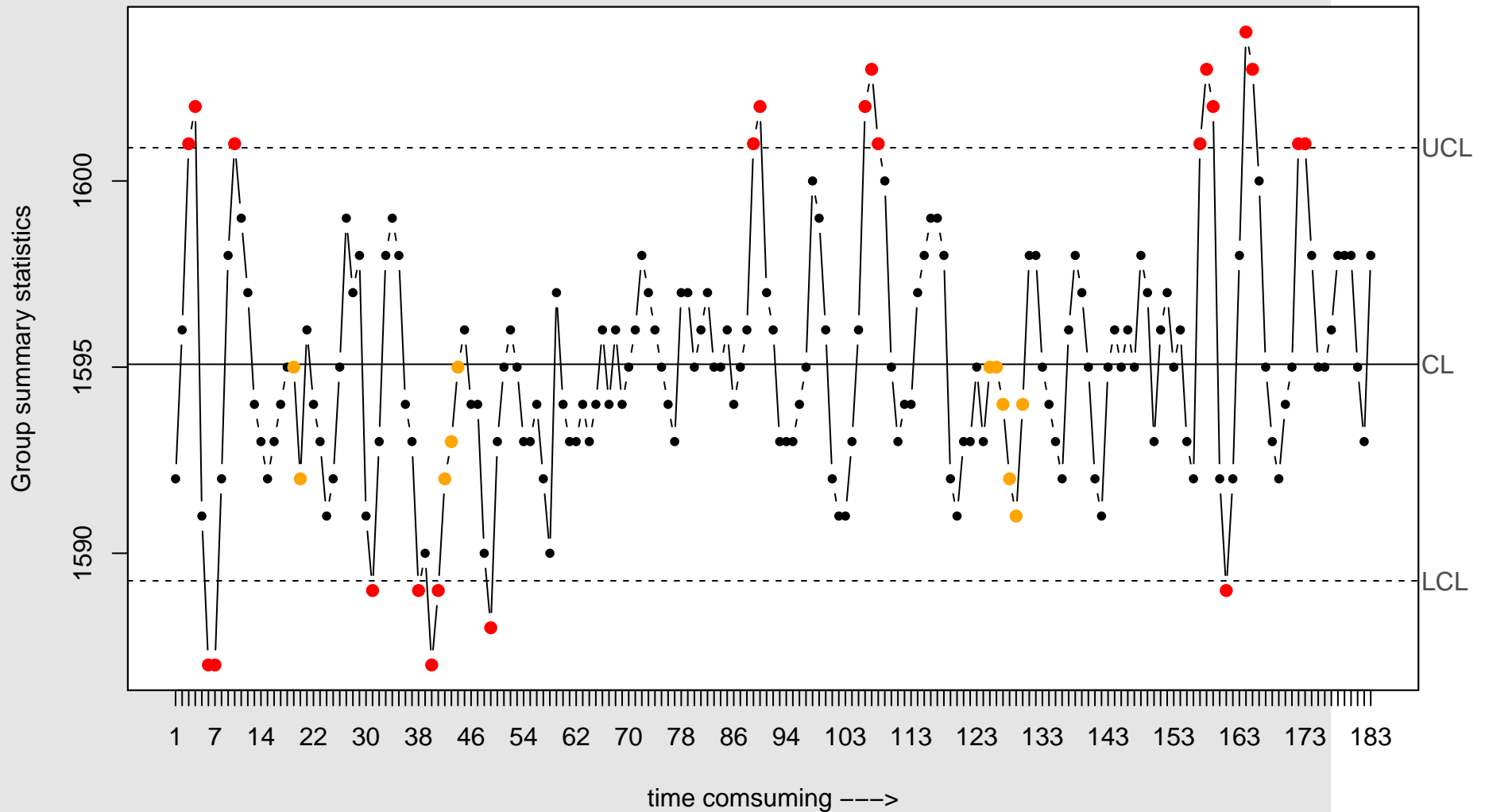
Number of groups = 183
Center = 1595.077
StdDev = 1.938664

LCL = 1589.261
UCL = 1600.892

Number beyond limits = 23
Number violating runs = 11

241th column point of this product

Group summary statistics

time comsuming ---->
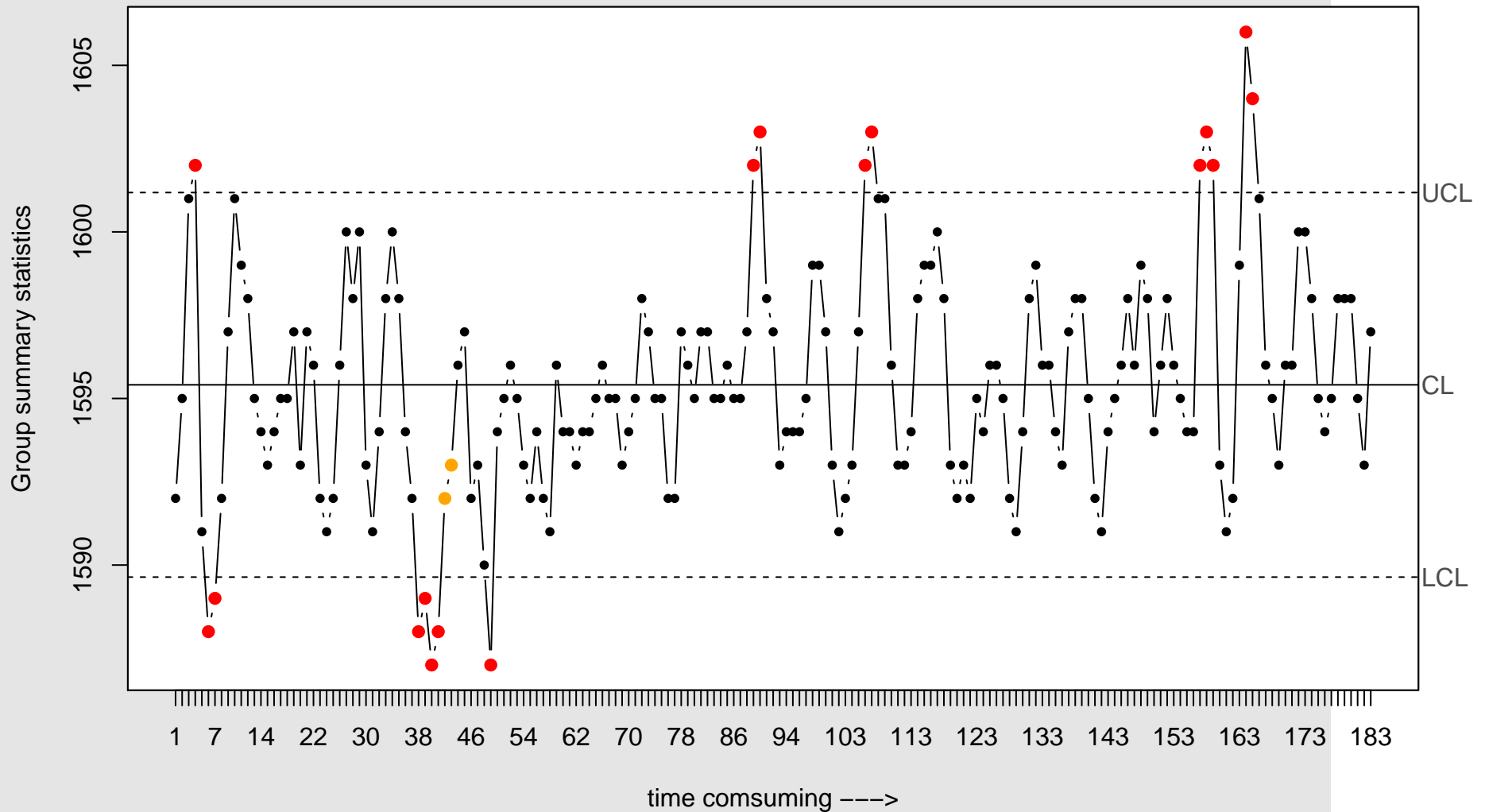
Number of groups = 183
Center = 1595.41   LCL = 1589.638   Number beyond limits = 17
StdDev = 1.924051   UCL = 1601.182   Number violating runs = 2

242th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1595.678
StdDev = 2.075053

LCL = 1589.452
UCL = 1601.903

Number beyond limits = 14
Number violating runs = 2

243th column point of this product

Group summary statistics

time comsuming --->

UCL

CL

LCL

Number of groups = 183
Center = 1595.891   LCL = 1589.826   Number beyond limits = 16
StdDev = 2.021471   UCL = 1601.955   Number violating runs = 15

244th column point of this product

Number of groups = 183
Center = 1596.087
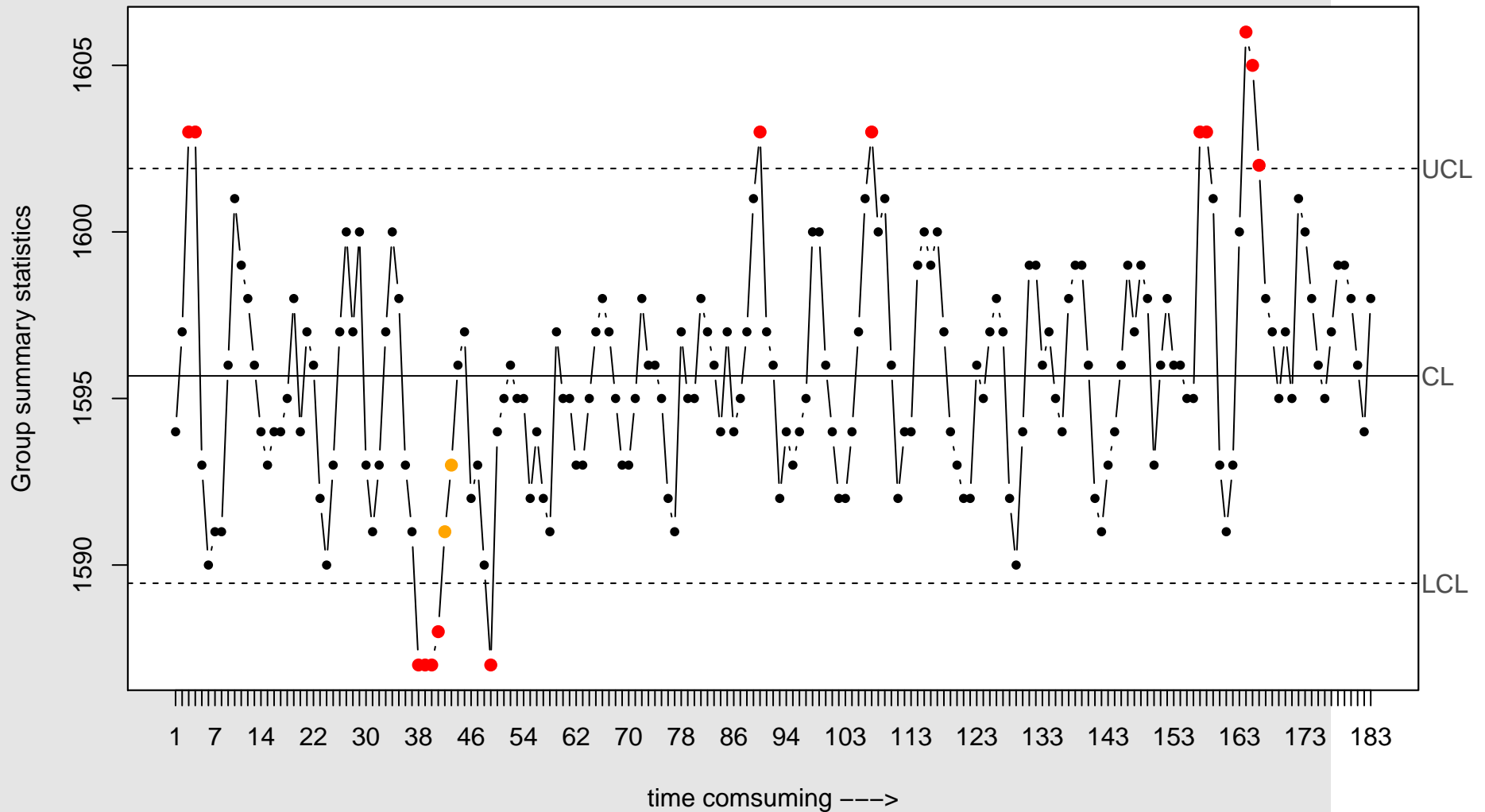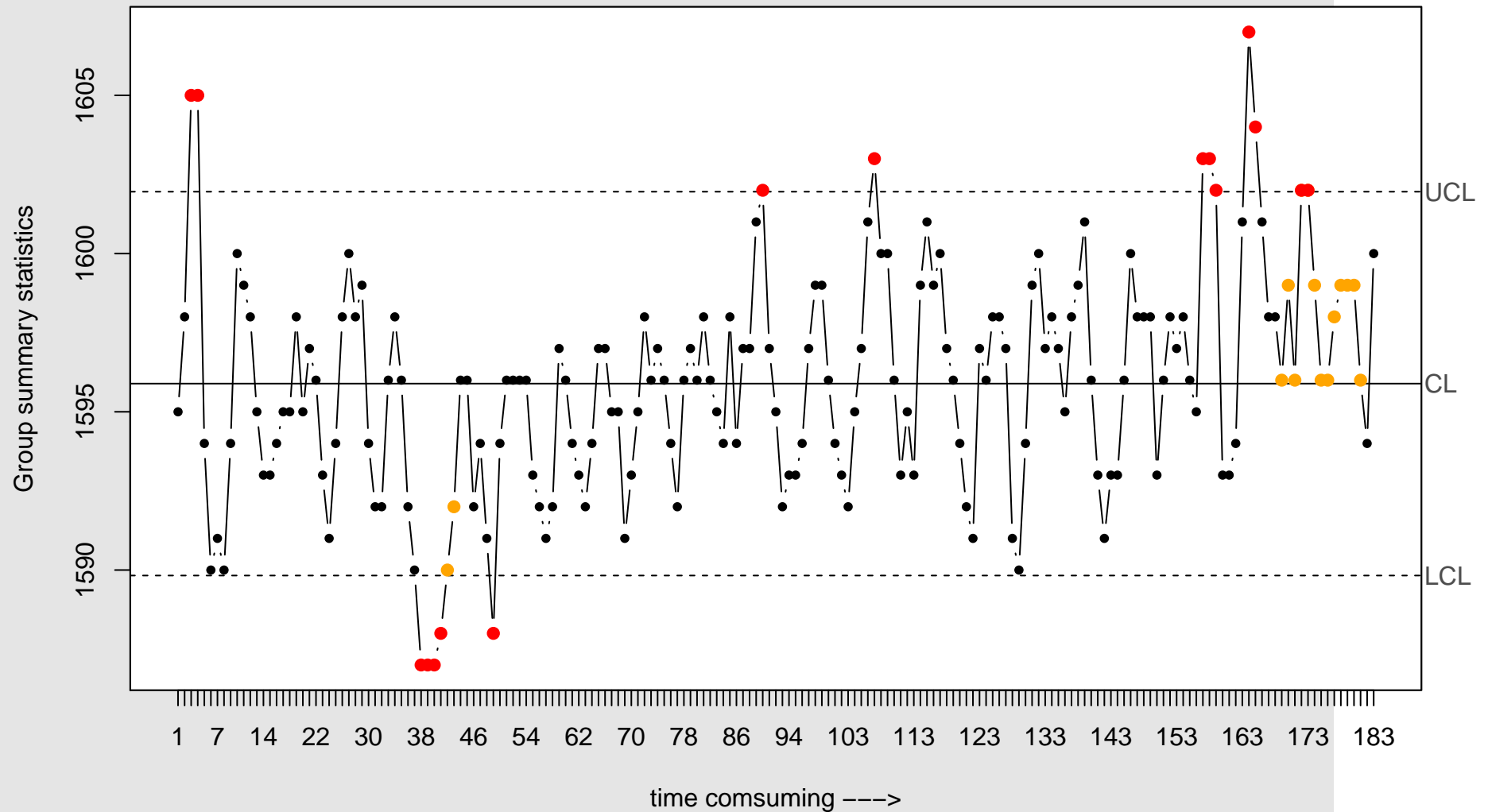StdDev = 1.953277

LCL = 1590.228
UCL = 1601.947

Number beyond limits = 19
Number violating runs = 27

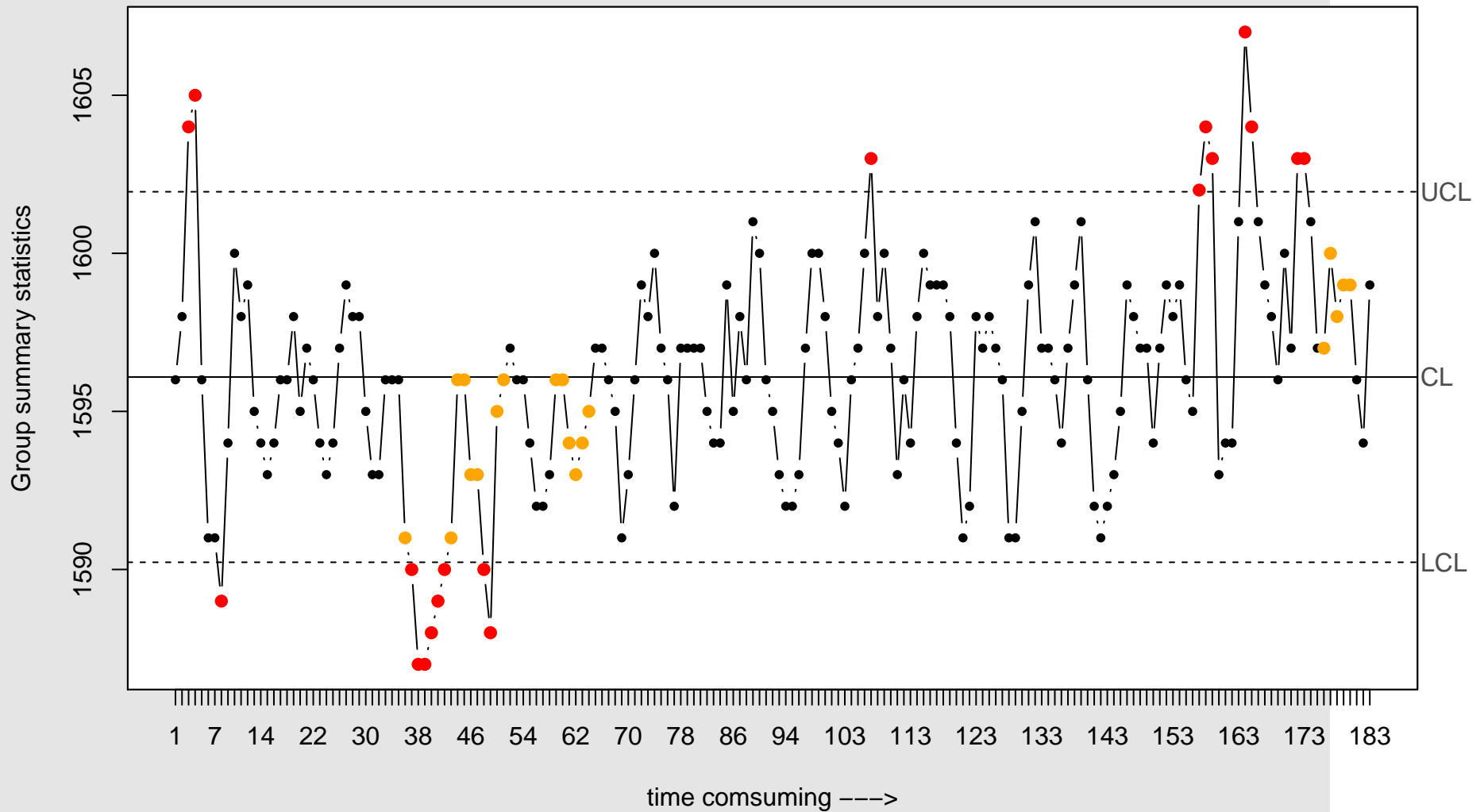# 245th column point of this product

Group summary statistics

time comsuming ---->
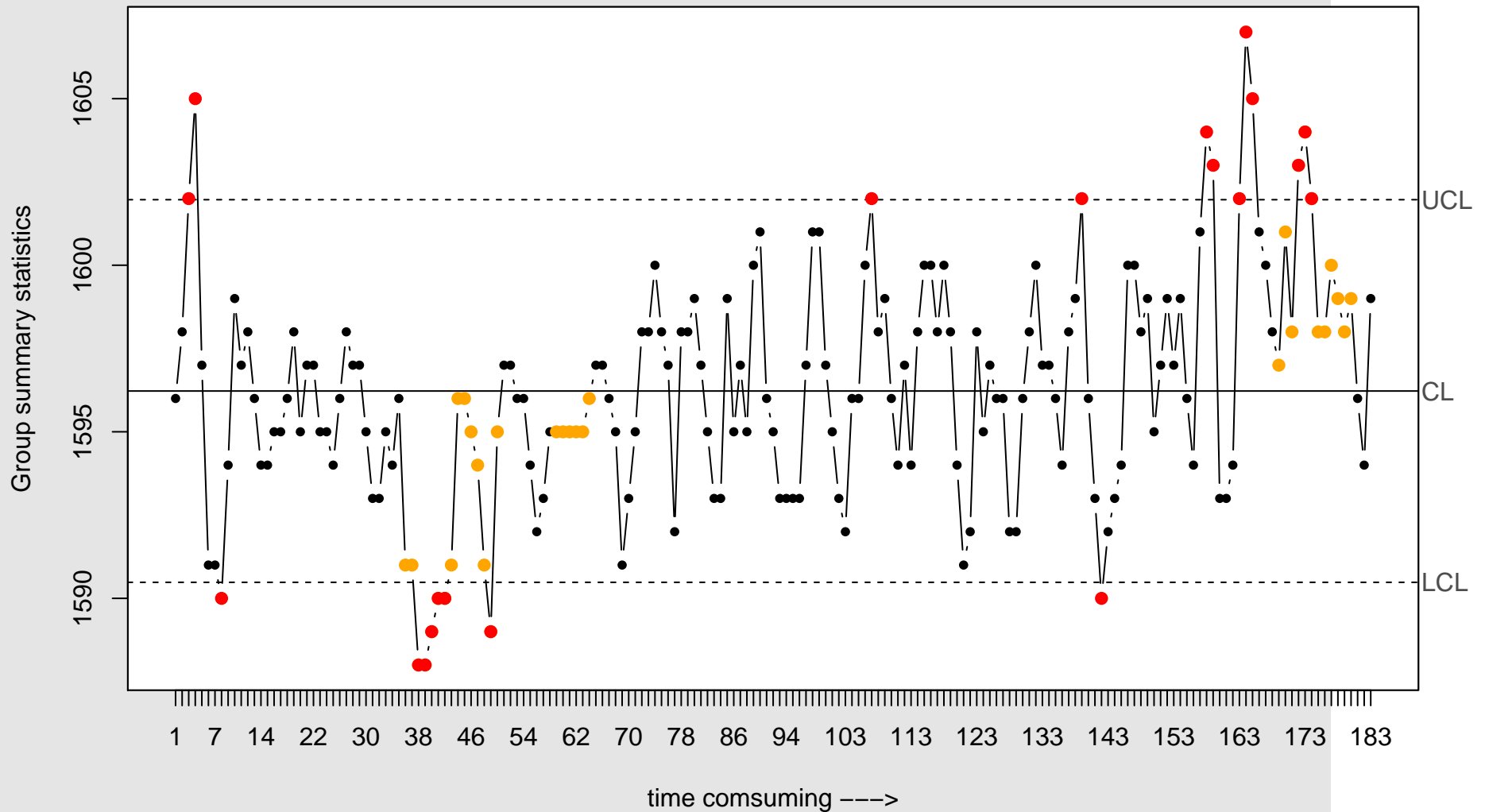
Number of groups = 183
Center = 1596.224   LCL = 1590.481   Number beyond limits = 20
StdDev = 1.914309   UCL = 1601.967   Number violating runs = 33

246th column point of this product

Group summary statistics

time comsuming ––––>
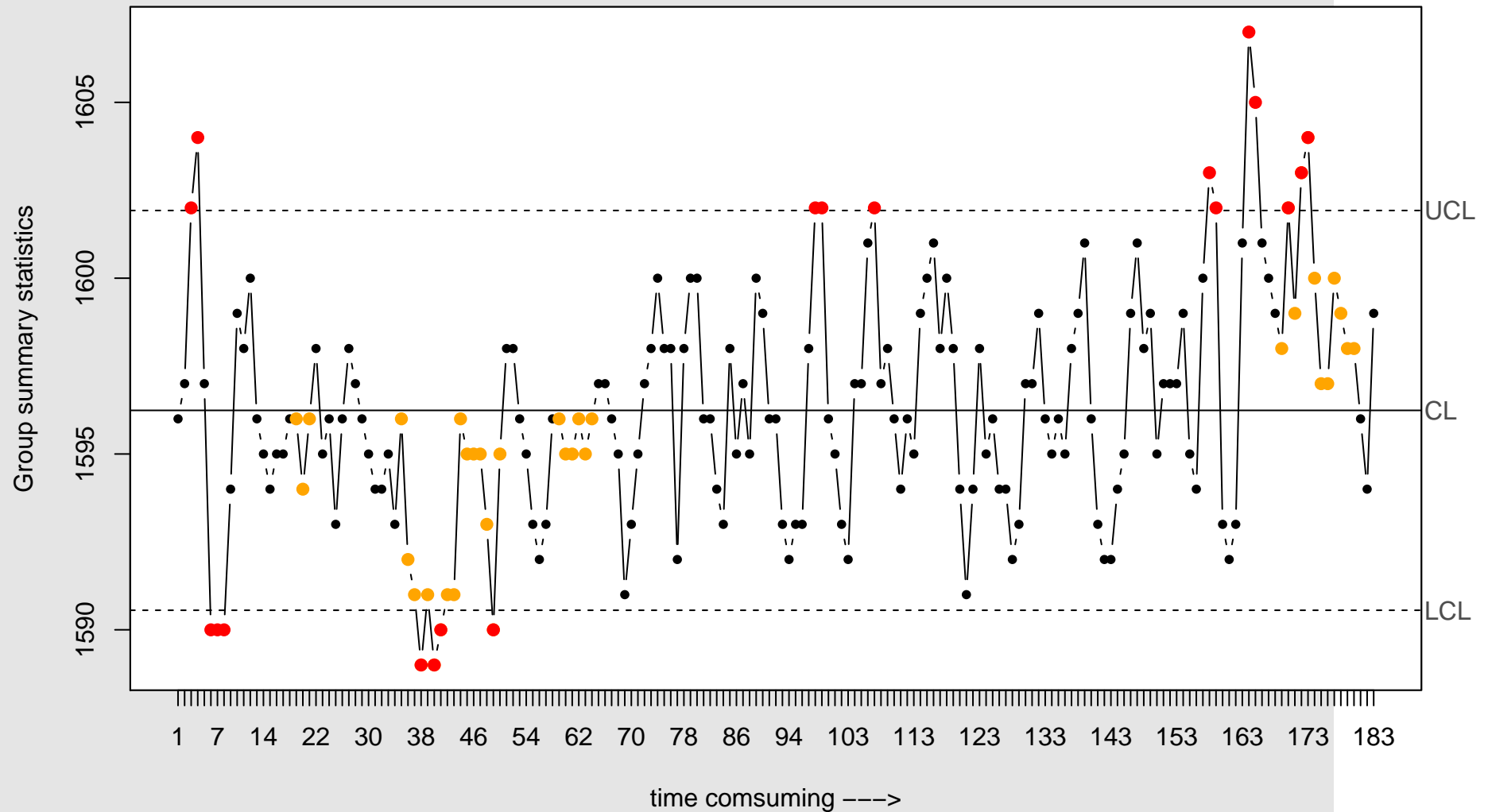
Number of groups = 183
Center = 1596.24   LCL = 1590.556   Number beyond limits = 19
StdDev = 1.894825   UCL = 1601.925   Number violating runs = 37

247th column point of this product

Group summary statistics

time comsuming ---->
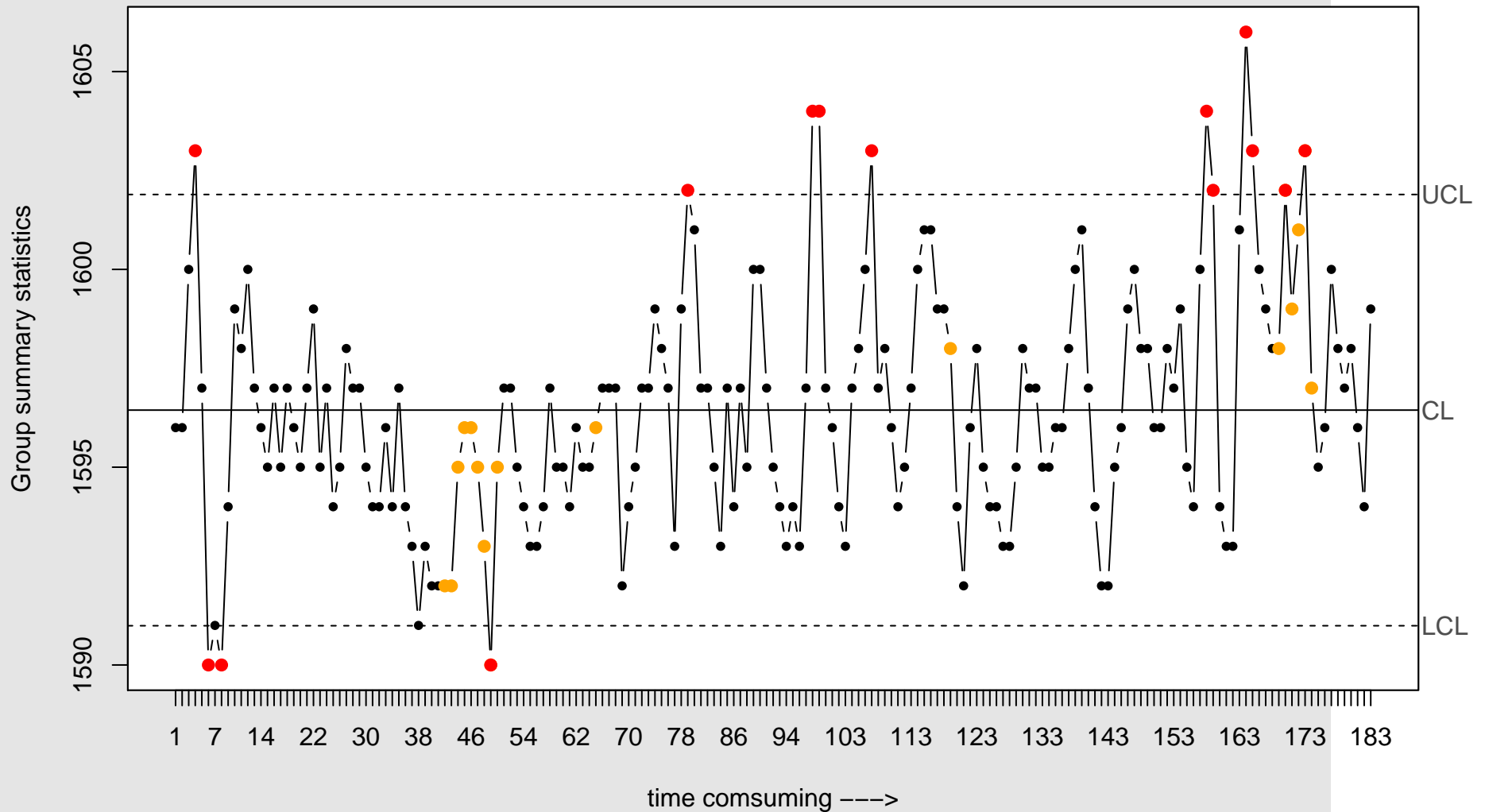
Number of groups = 183
Center = 1596.443   LCL = 1590.992   Number beyond limits = 14
StdDev = 1.816889   UCL = 1601.893   Number violating runs = 17

248th column point of this product

Group summary statistics

time comsuming ---->
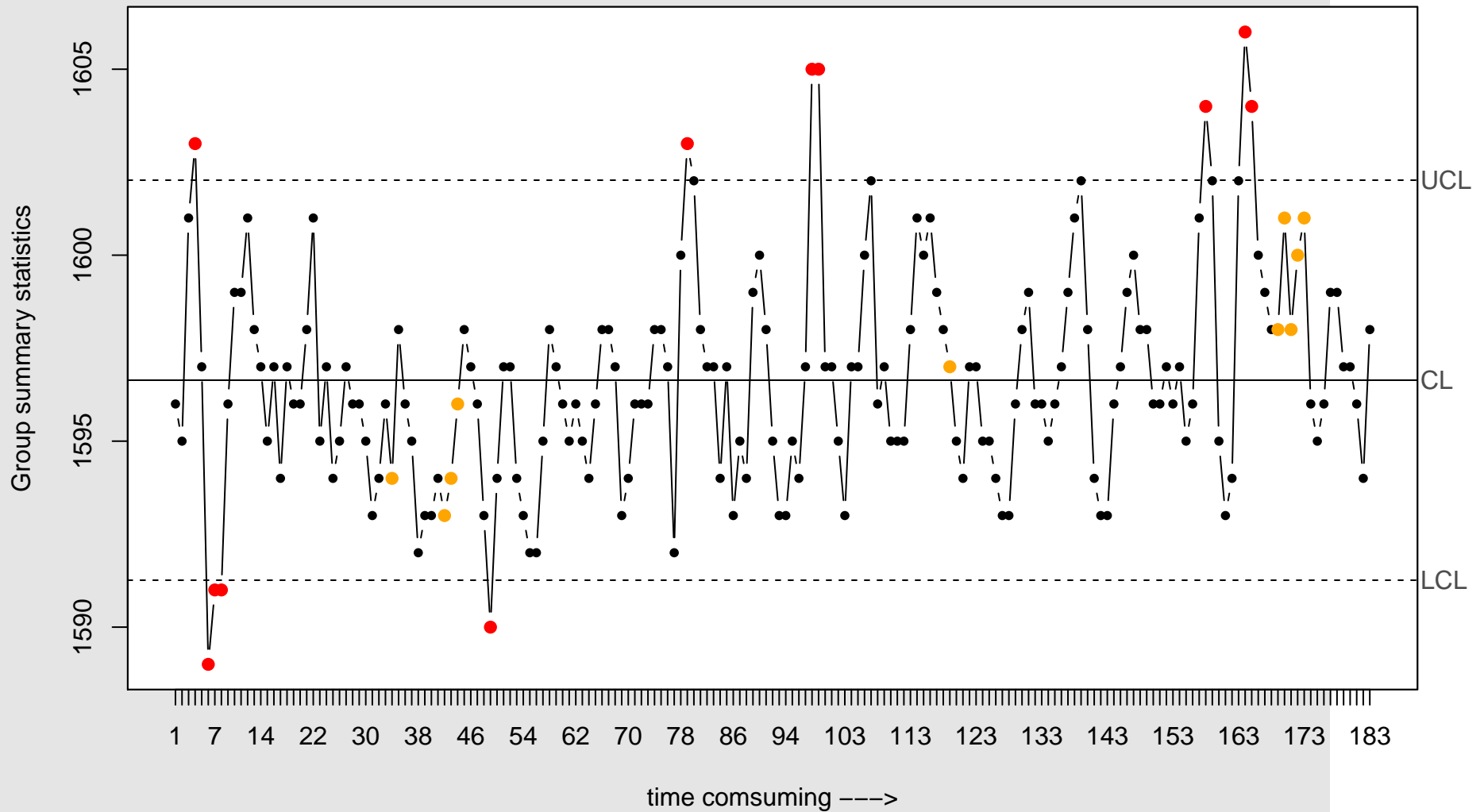
Number of groups = 183
Center = 1596.639
StdDev = 1.792534

LCL = 1591.262
UCL = 1602.017

Number beyond limits = 11
Number violating runs = 10

249th column point of this product

Group summary statistics

1605
1600
1595
1590

UCL
CL
LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming --->
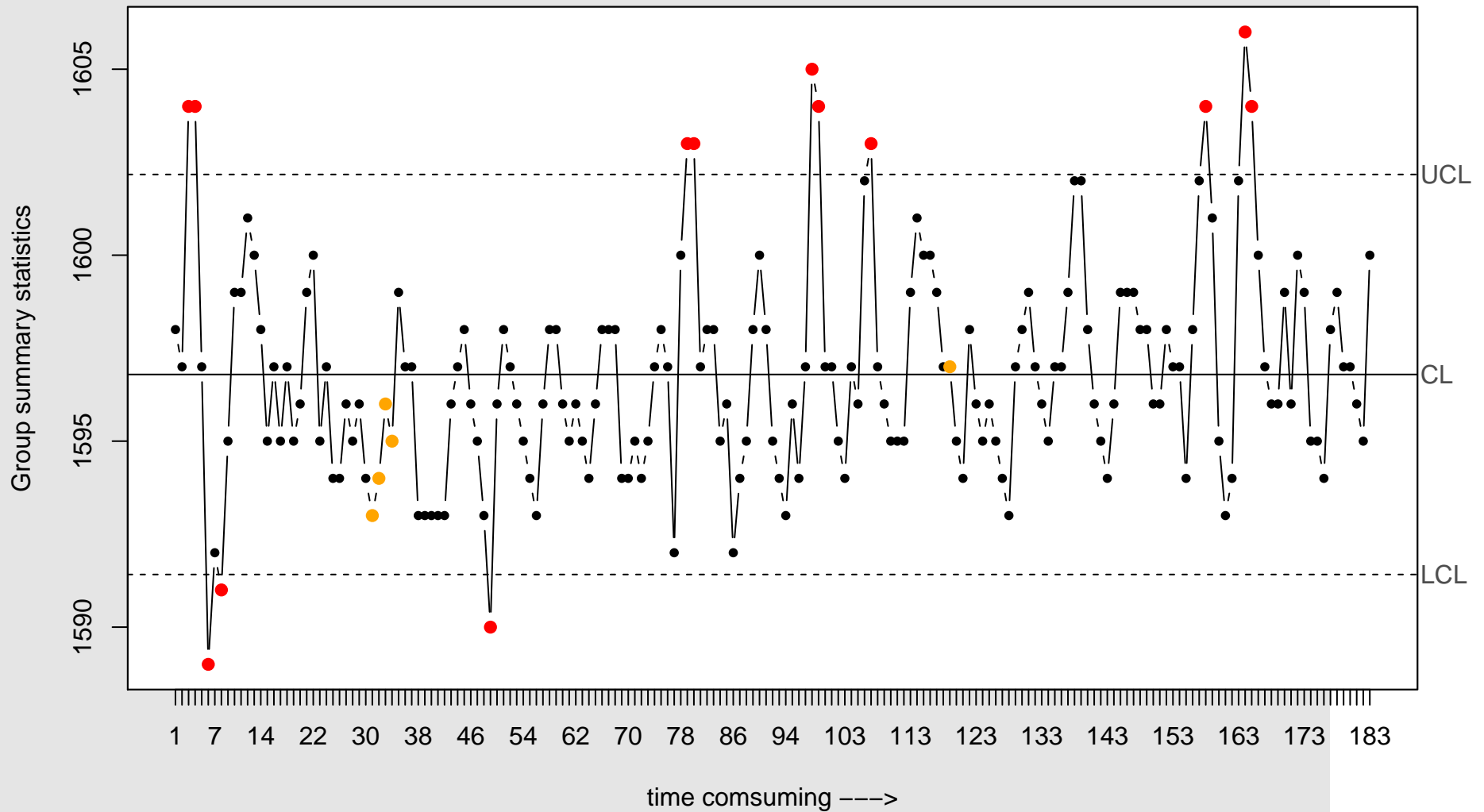
Number of groups = 183
Center = 1596.792   LCL = 1591.415   Number beyond limits = 13
StdDev = 1.792534   UCL = 1602.17   Number violating runs = 5

250th column point of this product

Group summary statistics

time comsuming ---->
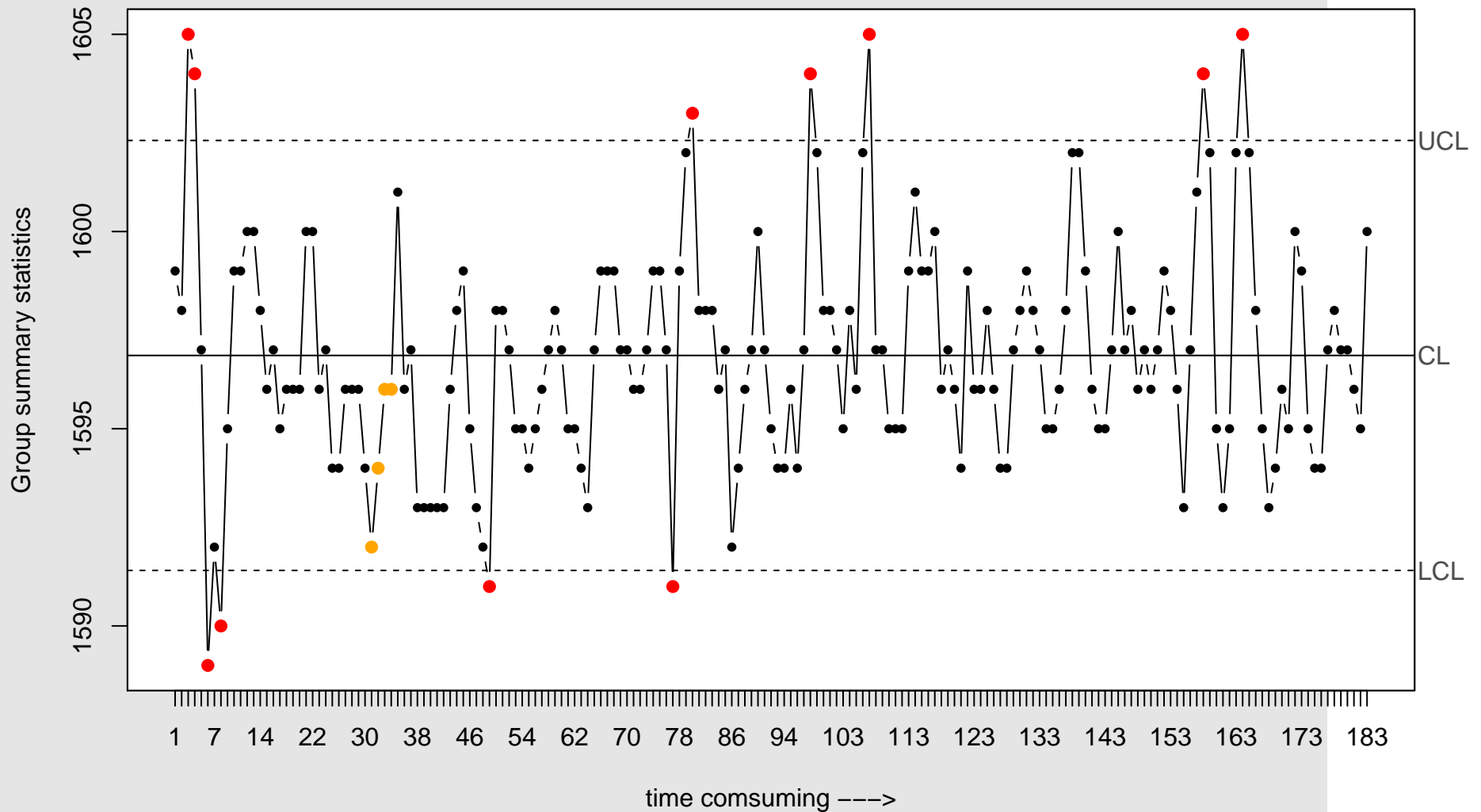
Number of groups = 183
Center = 1596.858   LCL = 1591.407   Number beyond limits = 11
StdDev = 1.816889   UCL = 1602.309   Number violating runs = 4

251th column point of this product

Group summary statistics

time comsuming ---->
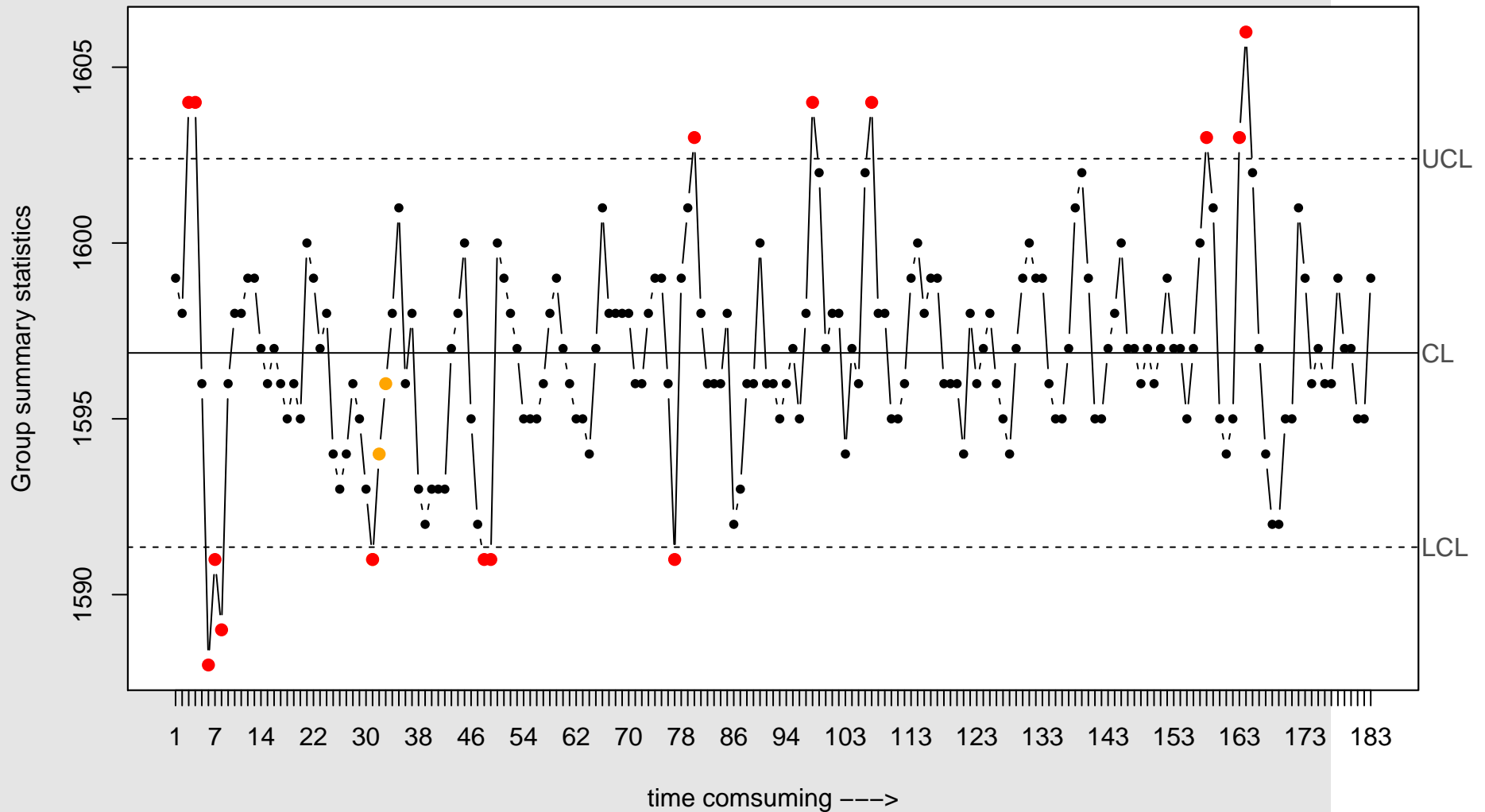
Number of groups = 183
Center = 1596.874   LCL = 1591.351   Number beyond limits = 15
StdDev = 1.841244   UCL = 1602.398   Number violating runs = 3

252th column point of this product

Group summary statistics

time comsuming ---->
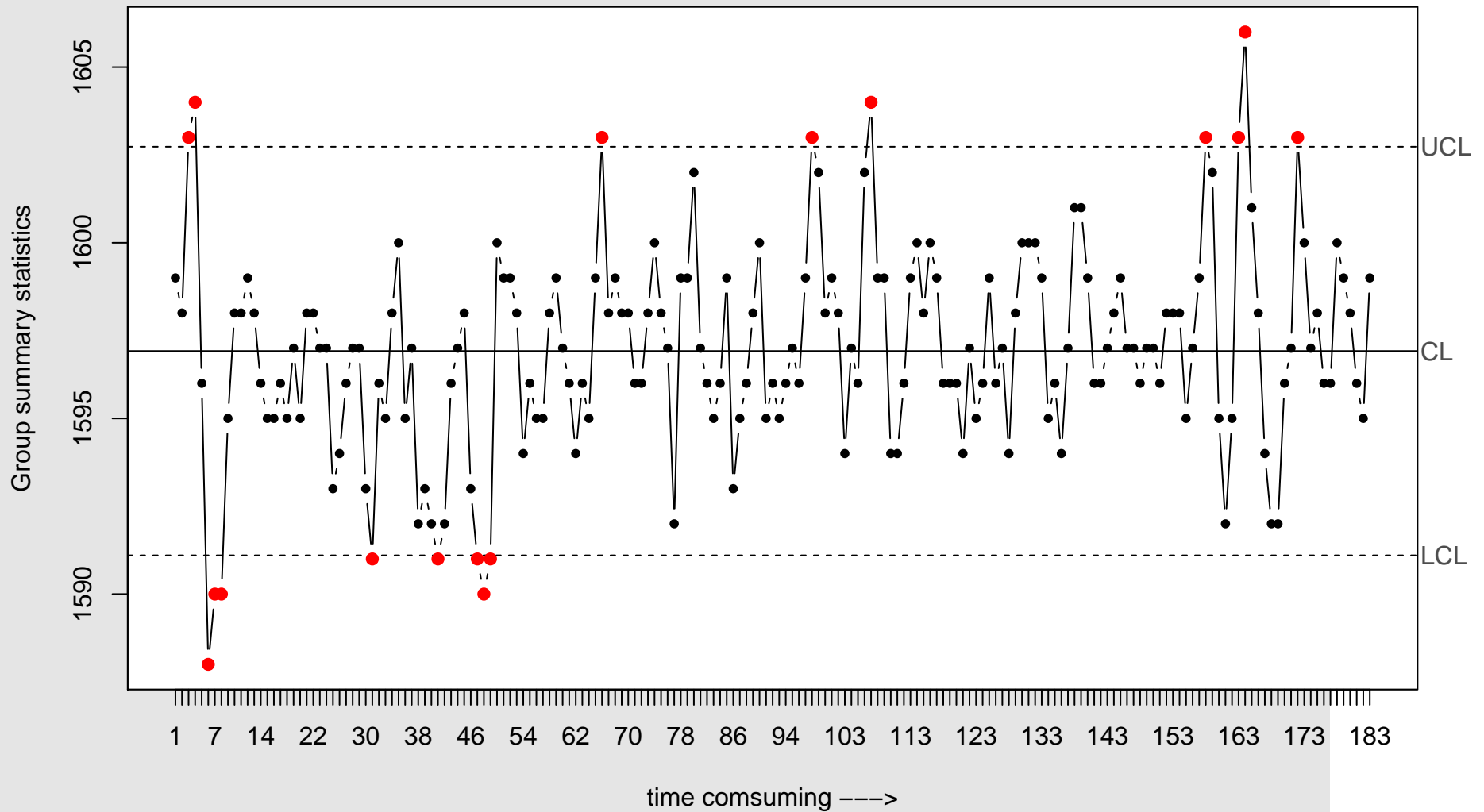
Number of groups = 183
Center = 1596.918   LCL = 1591.102   Number beyond limits = 17
StdDev = 1.938664   UCL = 1602.734   Number violating runs = 0

253th column point of this product

Group summary statistics

time comsuming ---->
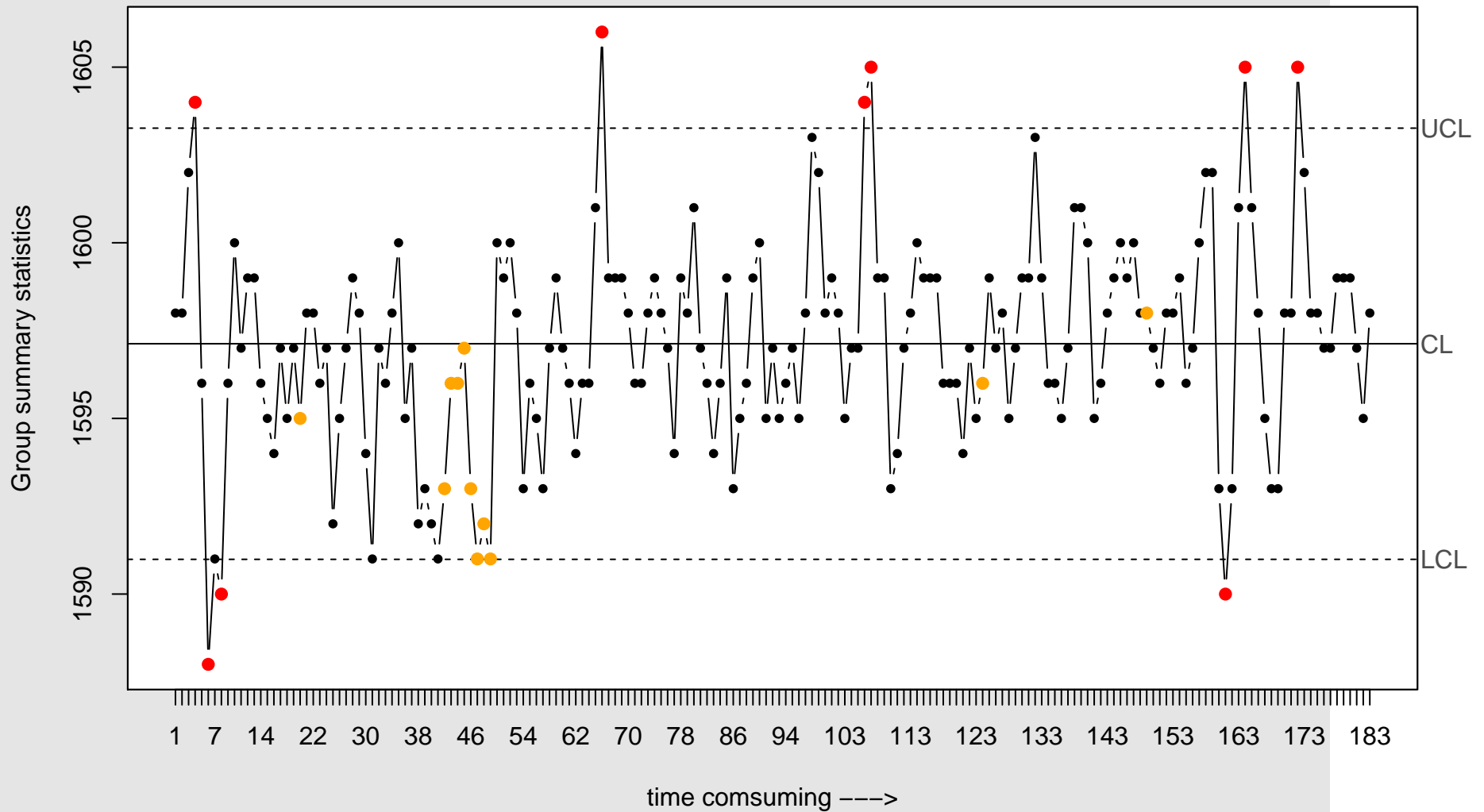
Number of groups = 183
Center = 1597.126   LCL = 1590.988   Number beyond limits = 9
StdDev = 2.045827   UCL = 1603.263   Number violating runs = 11

254th column point of this product

Group summary statistics

1605
1600
1595
1590

UCL
CL
LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming --->
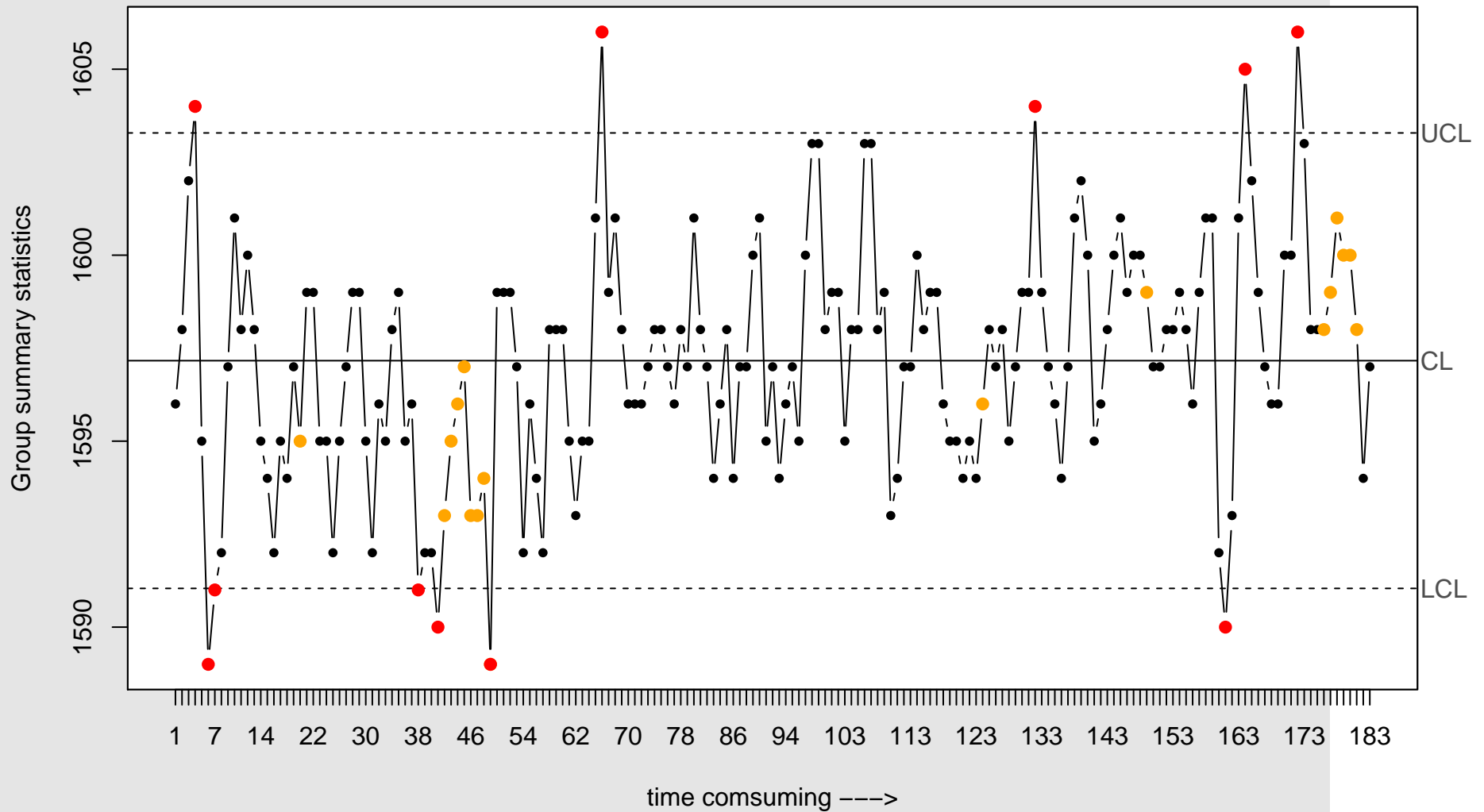
Number of groups = 183
Center = 1597.164
StdDev = 2.040955

LCL = 1591.041
UCL = 1603.287

Number beyond limits = 11
Number violating runs = 17

255th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1597.399
StdDev = 2.118892

LCL = 1591.042
UCL = 1603.756

Number beyond limits = 15
Number violating runs = 14

256th column point of this product

time comsuming ––––>

Number of groups = 183
Center = 1597.514   LCL = 1591.069   Number beyond limits = 15
StdDev = 2.148118   UCL = 1603.958   Number violating runs = 11

257th column point of this product
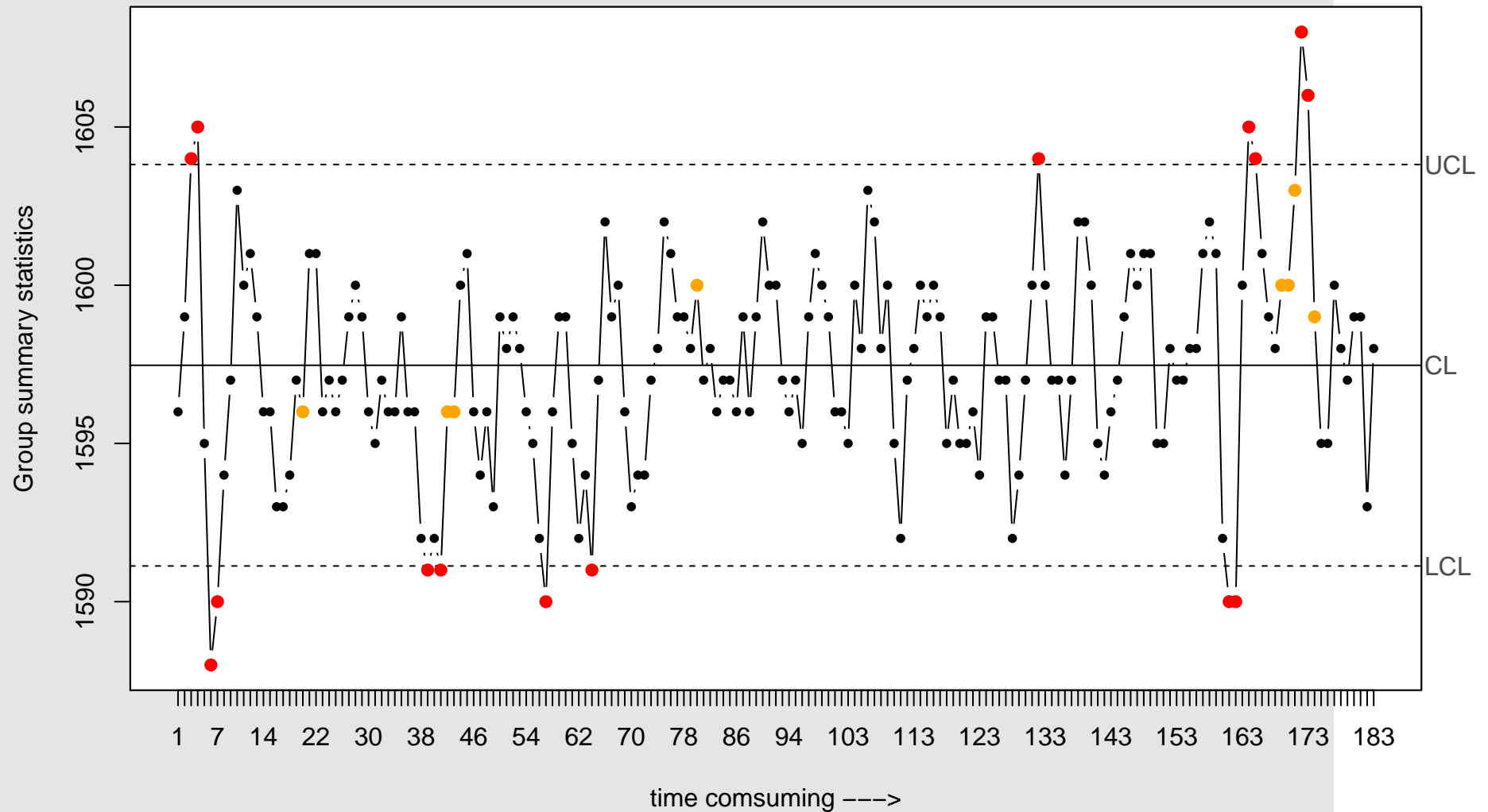
Number of groups = 183
Center = 1597.47
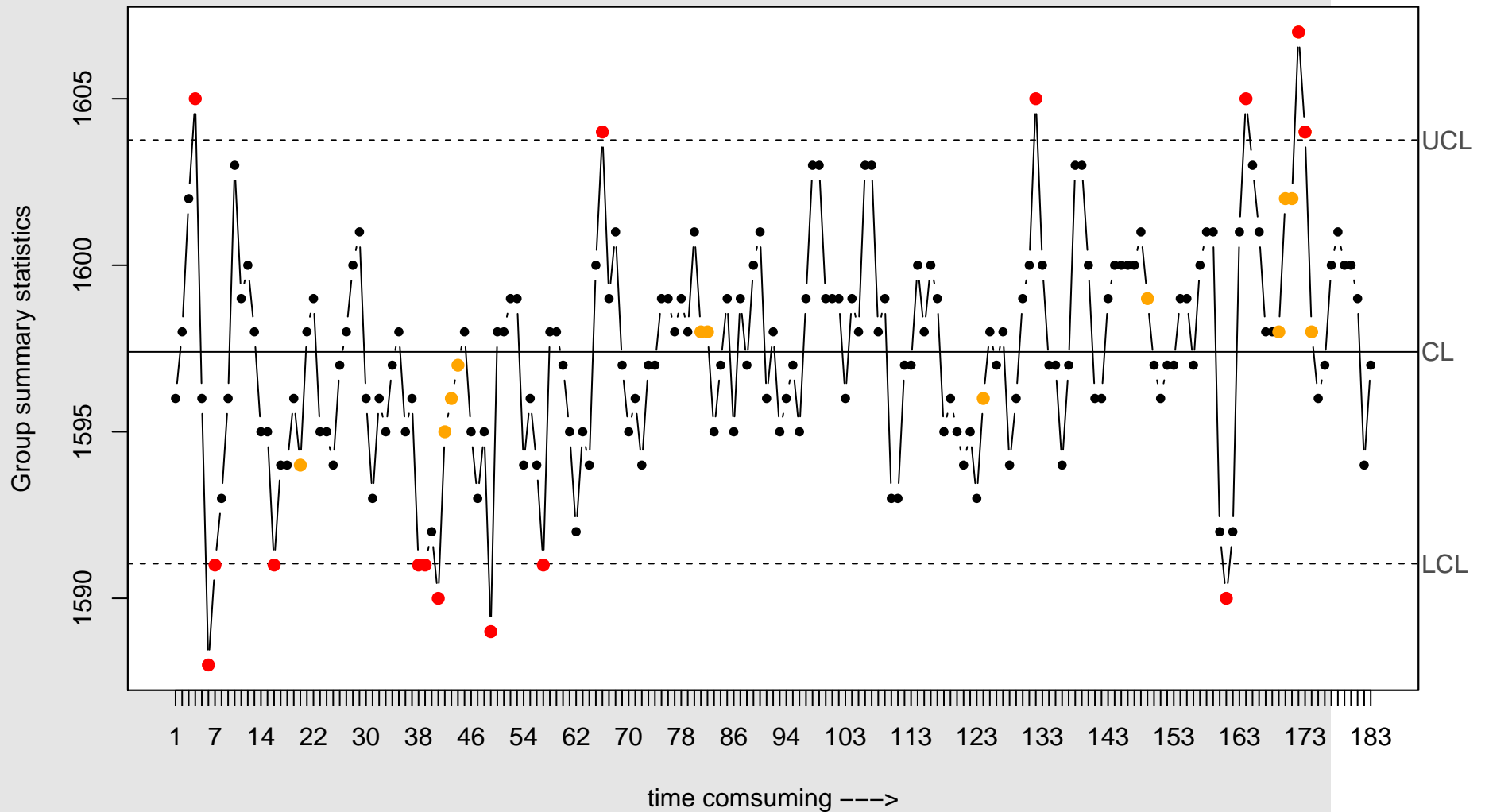StdDev = 2.114021

LCL = 1591.128
UCL = 1603.812

Number beyond limits = 15
Number violating runs = 10

258th column point of this product

Group summary statistics

time comsuming --->
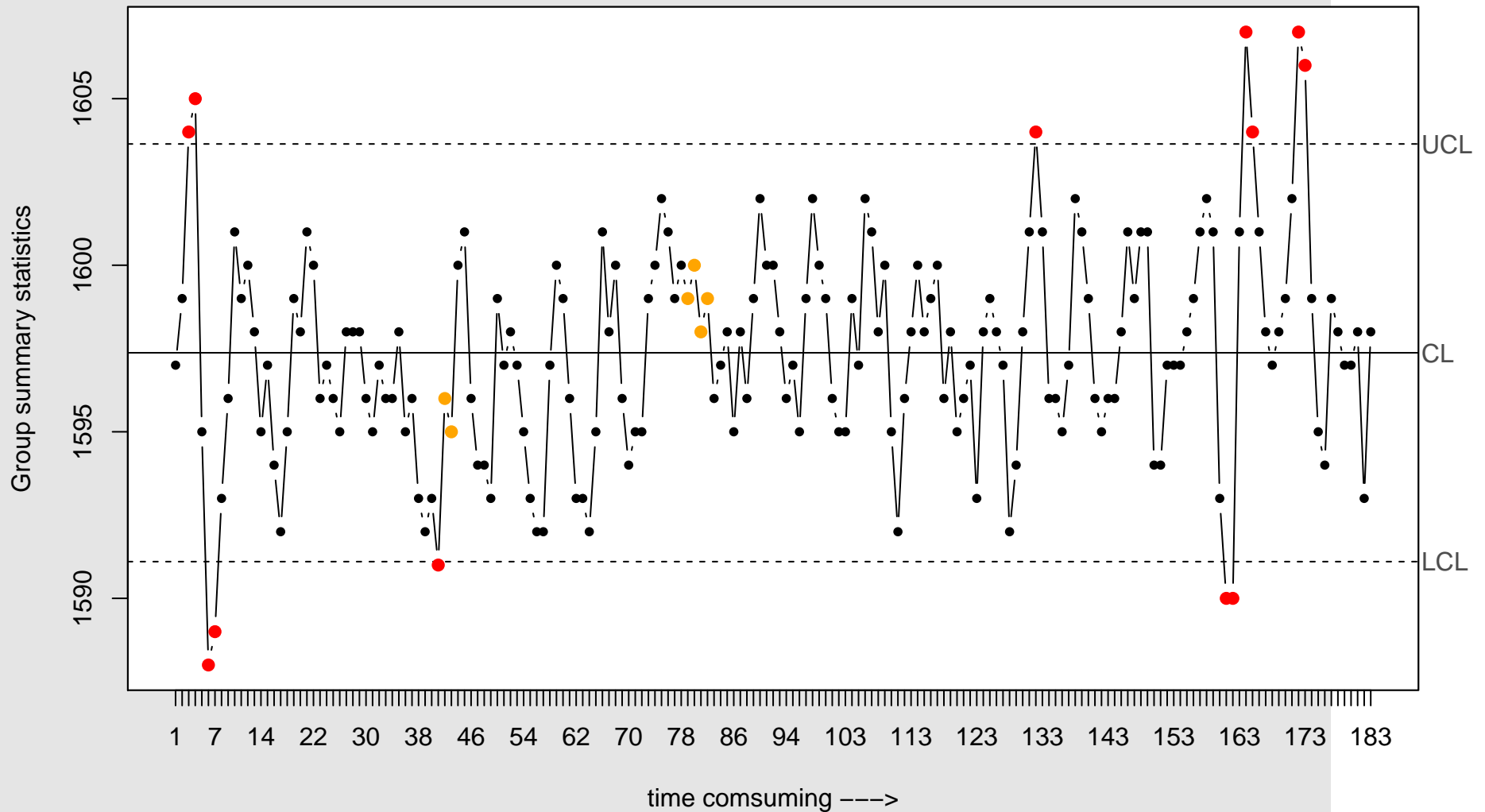
Number of groups = 183
Center = 1597.372
StdDev = 2.089666
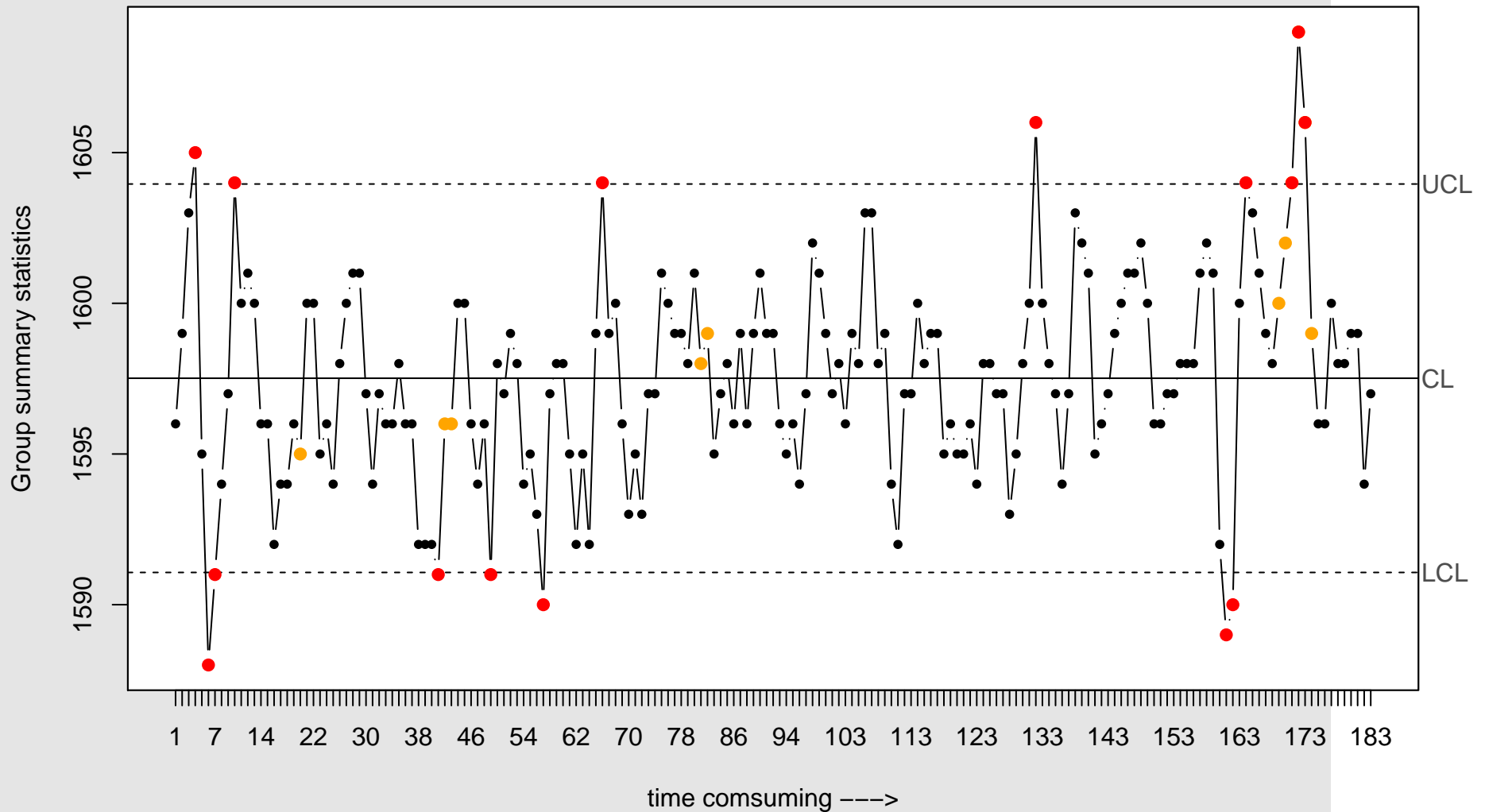
LCL = 1591.103
UCL = 1603.641

Number beyond limits = 12
Number violating runs = 6

259th column point of this product

Group summary statistics

UCL

CL

LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming --->
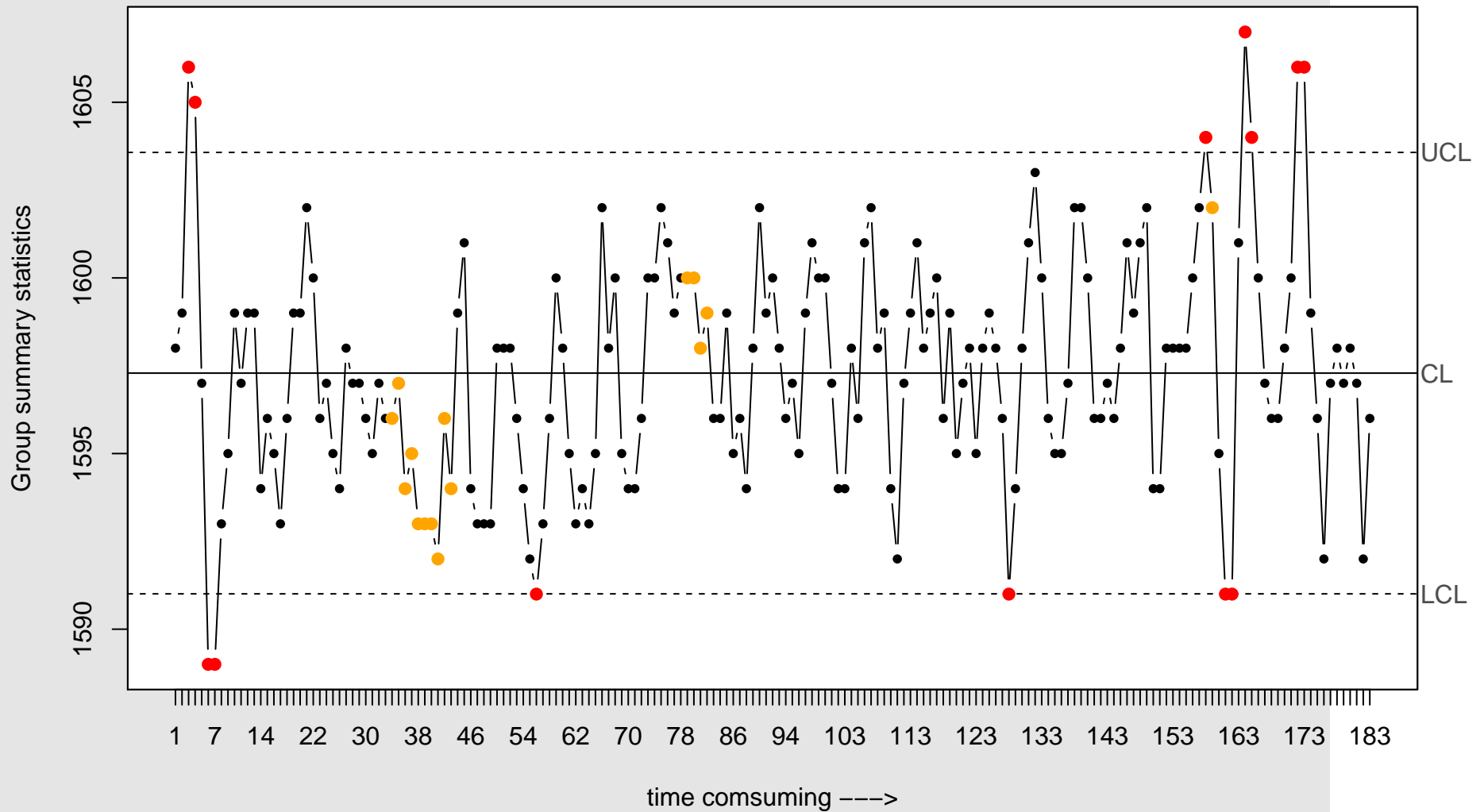
Number of groups = 183
Center = 1597.29   LCL = 1591.006   Number beyond limits = 13
StdDev = 2.094537   UCL = 1603.573   Number violating runs = 16

260th column point of this product

Group summary statistics

time comsuming ––––>

UCL

CL

LCL

1605

1600

1595

1590

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183
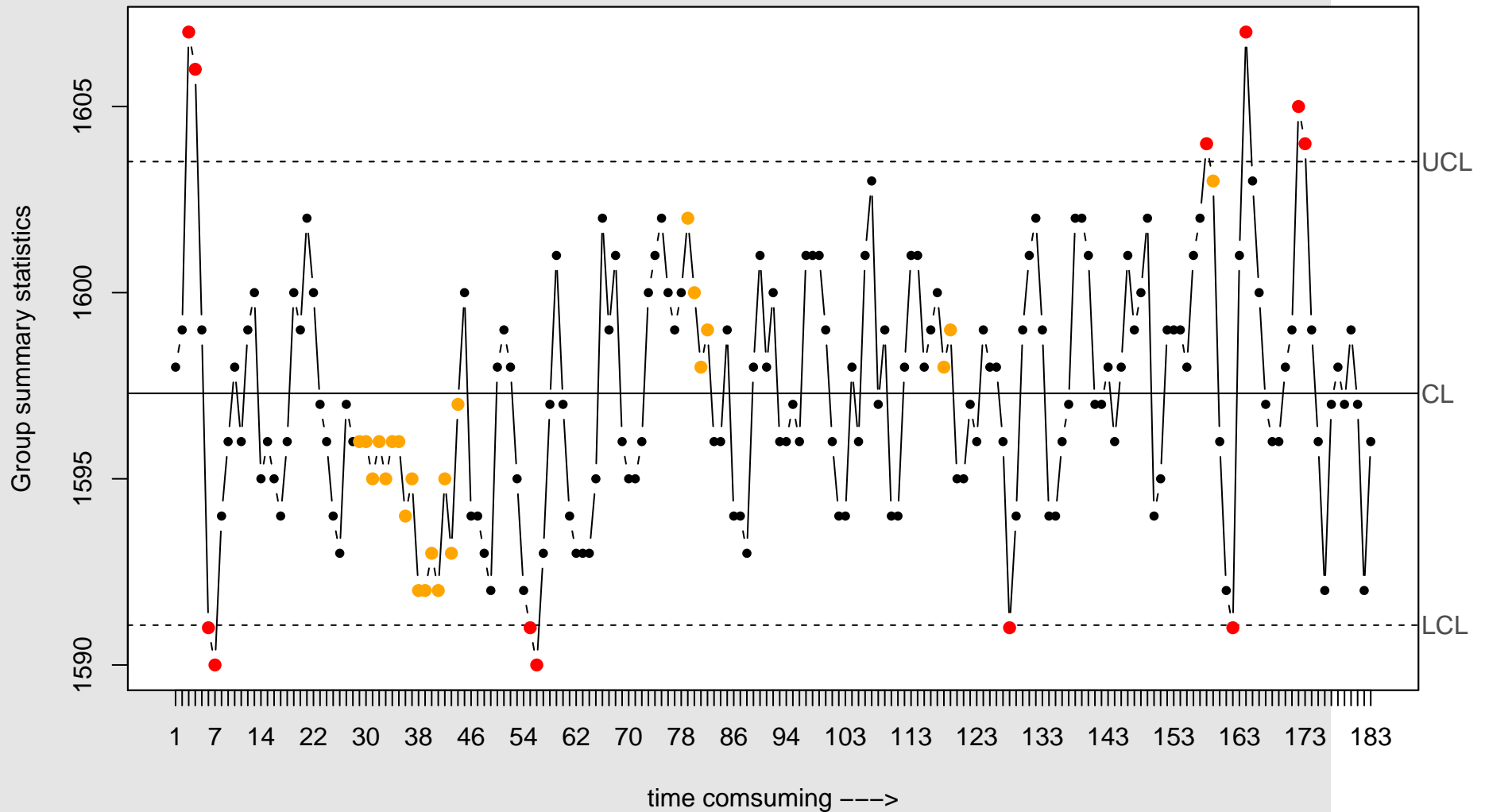
Number of groups = 183
Center = 1597.295   LCL = 1591.07   Number beyond limits = 12
StdDev = 2.075053   UCL = 1603.52   Number violating runs = 24

261th column point of this product

Group summary statistics

time comsuming ---->
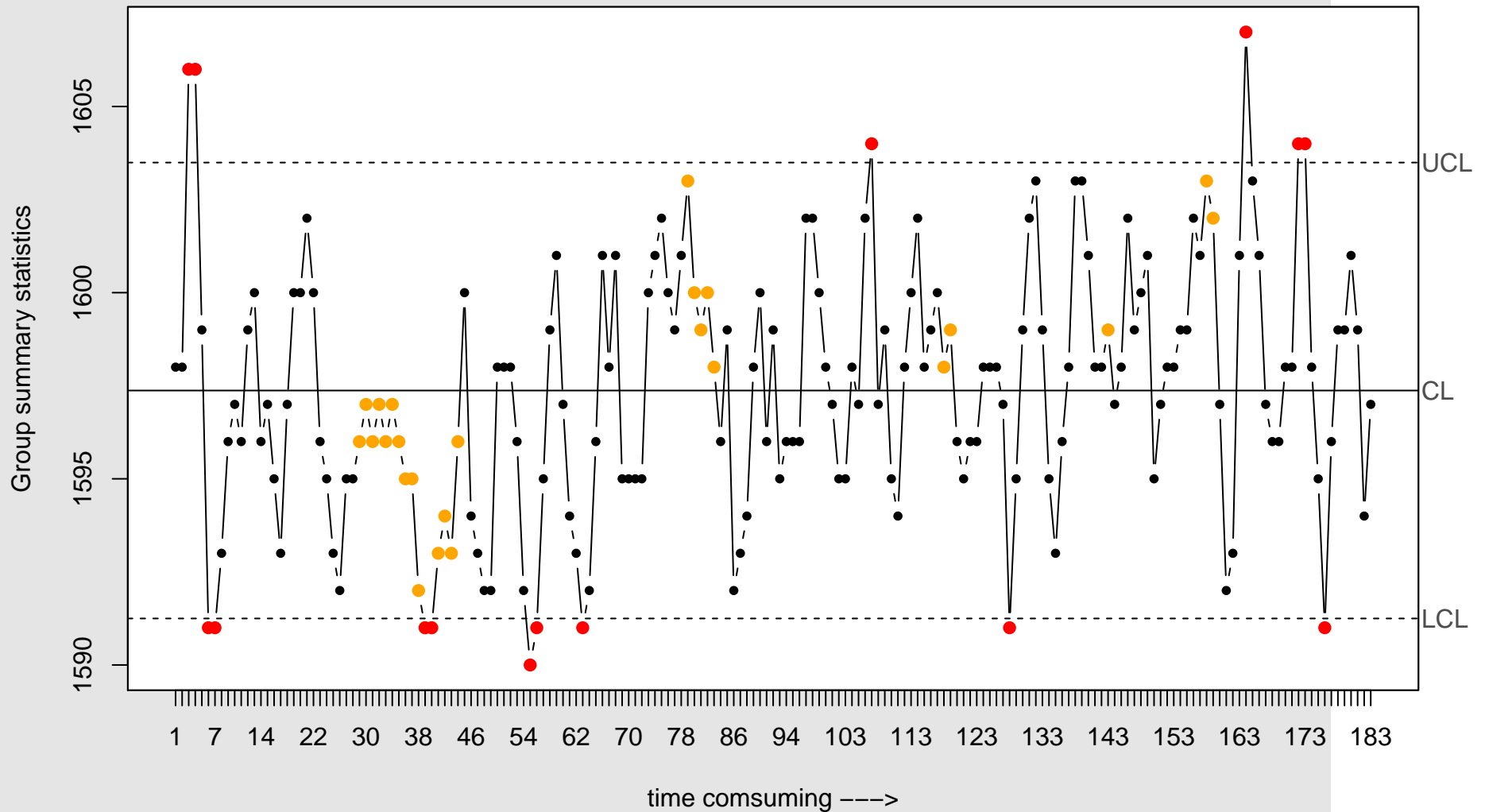
Number of groups = 183
Center = 1597.372
StdDev = 2.040955

LCL = 1591.249
UCL = 1603.494

Number beyond limits = 15
Number violating runs = 26

262th column point of this product

Group summary statistics

UCL

CL

LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming –––>
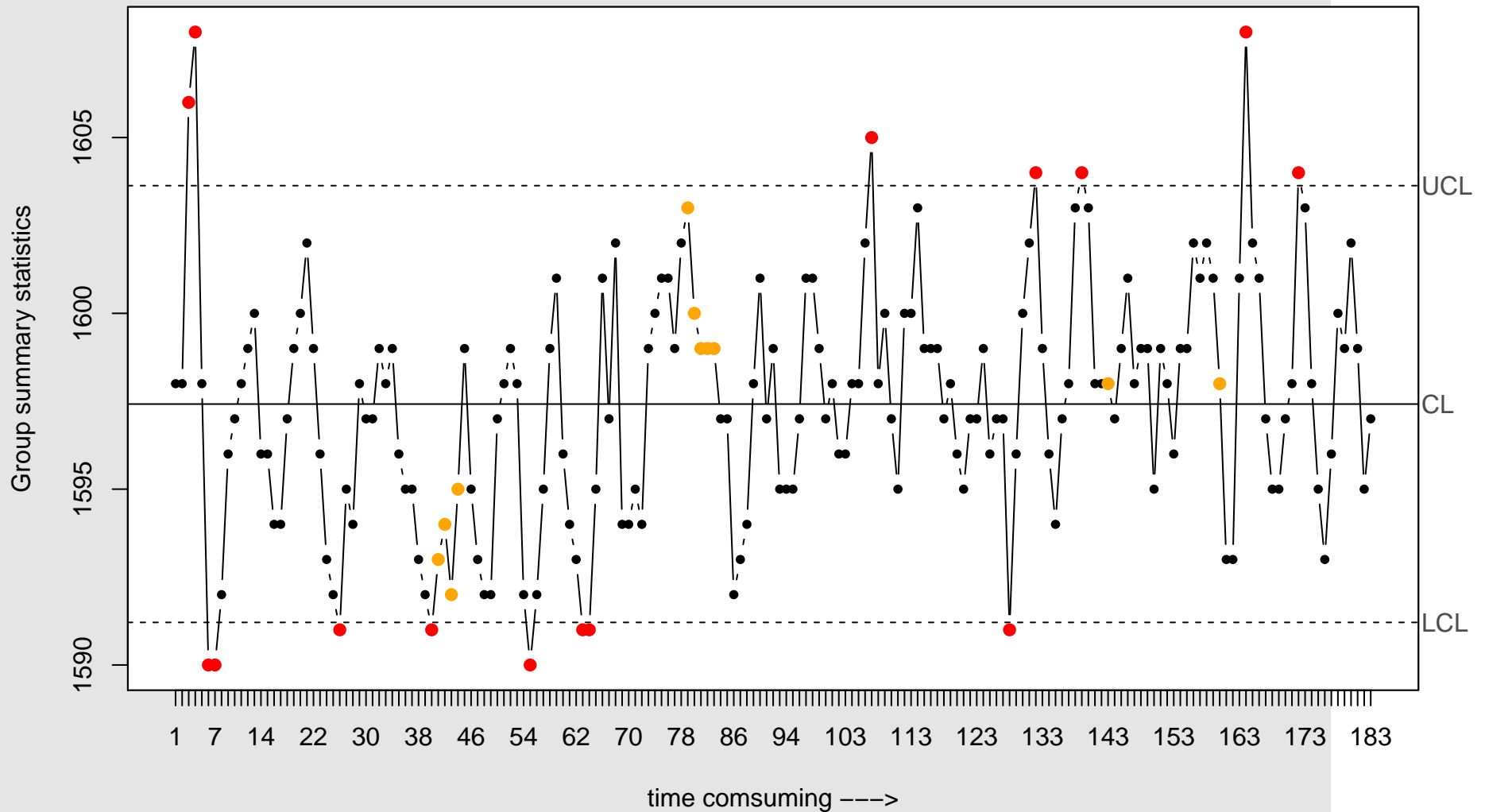
Number of groups = 183
Center = 1597.421   LCL = 1591.21   Number beyond limits = 15
StdDev = 2.070182   UCL = 1603.631   Number violating runs = 11

263th column point of this product

Group summary statistics

UCL

CL

LCL

1605

1600

1595

1590

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ---->
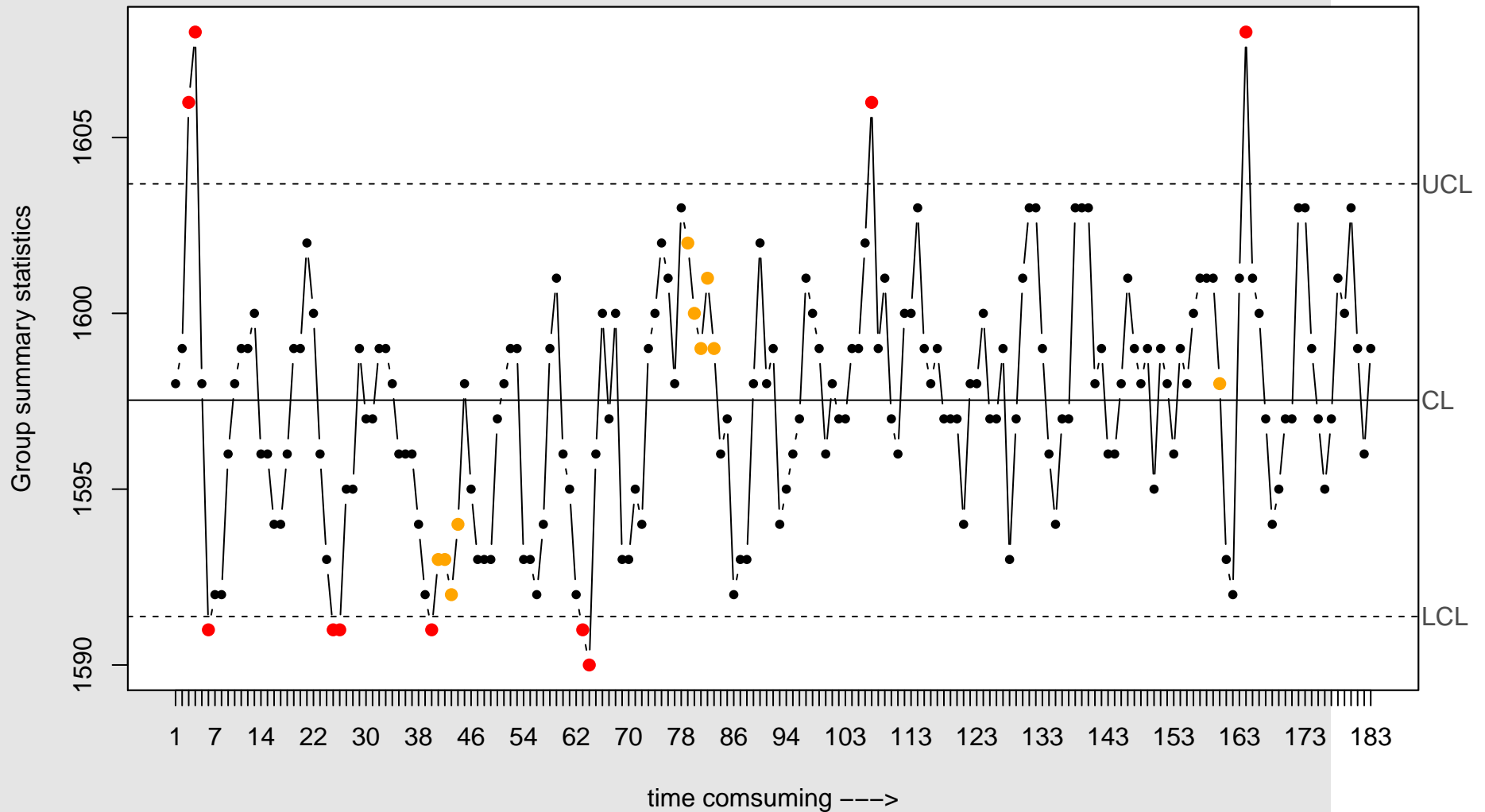
Number of groups = 183
Center = 1597.53   LCL = 1591.378   Number beyond limits = 10
StdDev = 2.050698   UCL = 1603.682   Number violating runs = 10

264th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1597.574   LCL = 1591.509   Number beyond limits = 11
StdDev = 2.021471   UCL = 1603.638   Number violating runs = 12

265th column point of this product

Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1597.432
StdDev = 2.045827
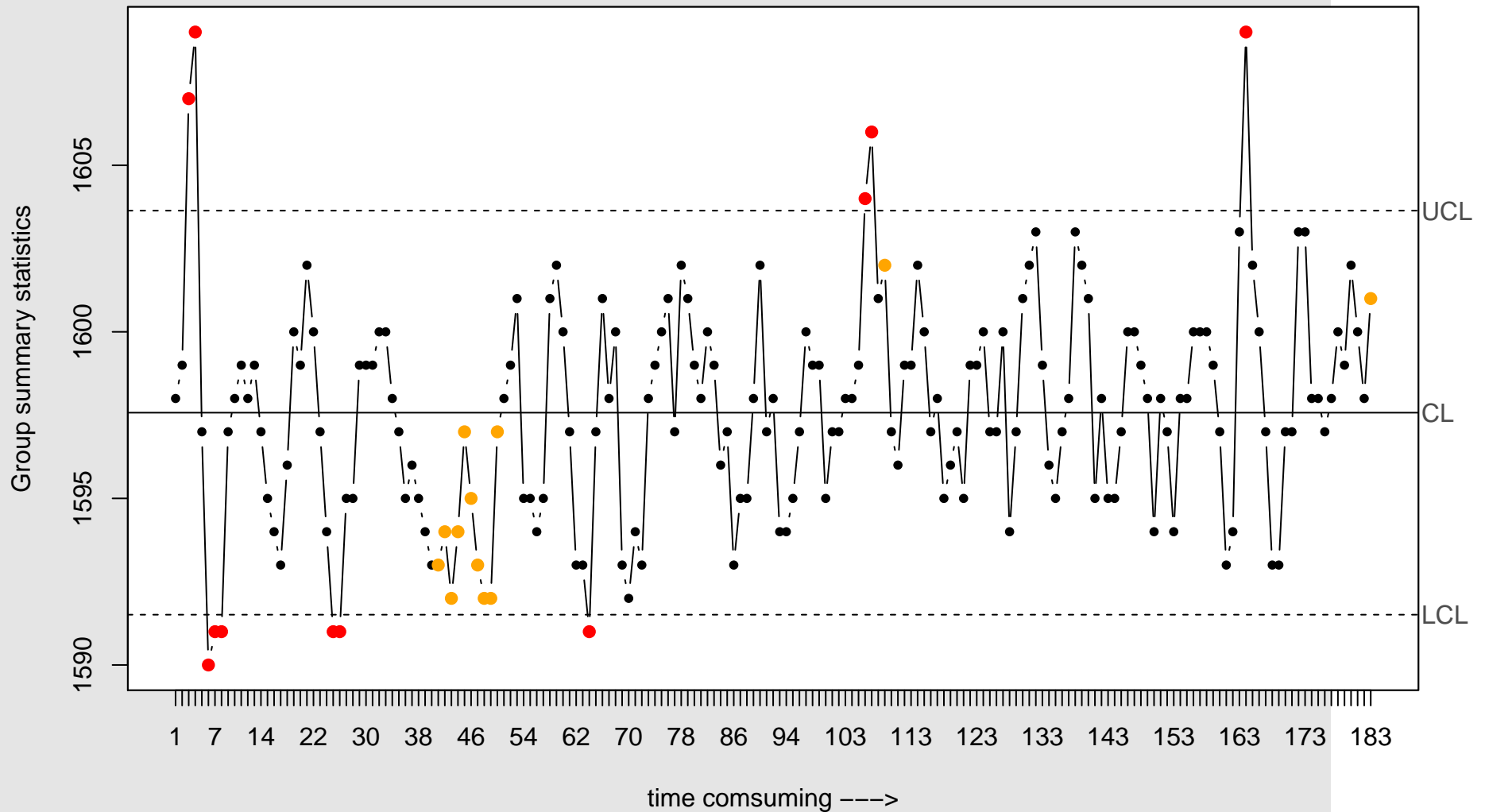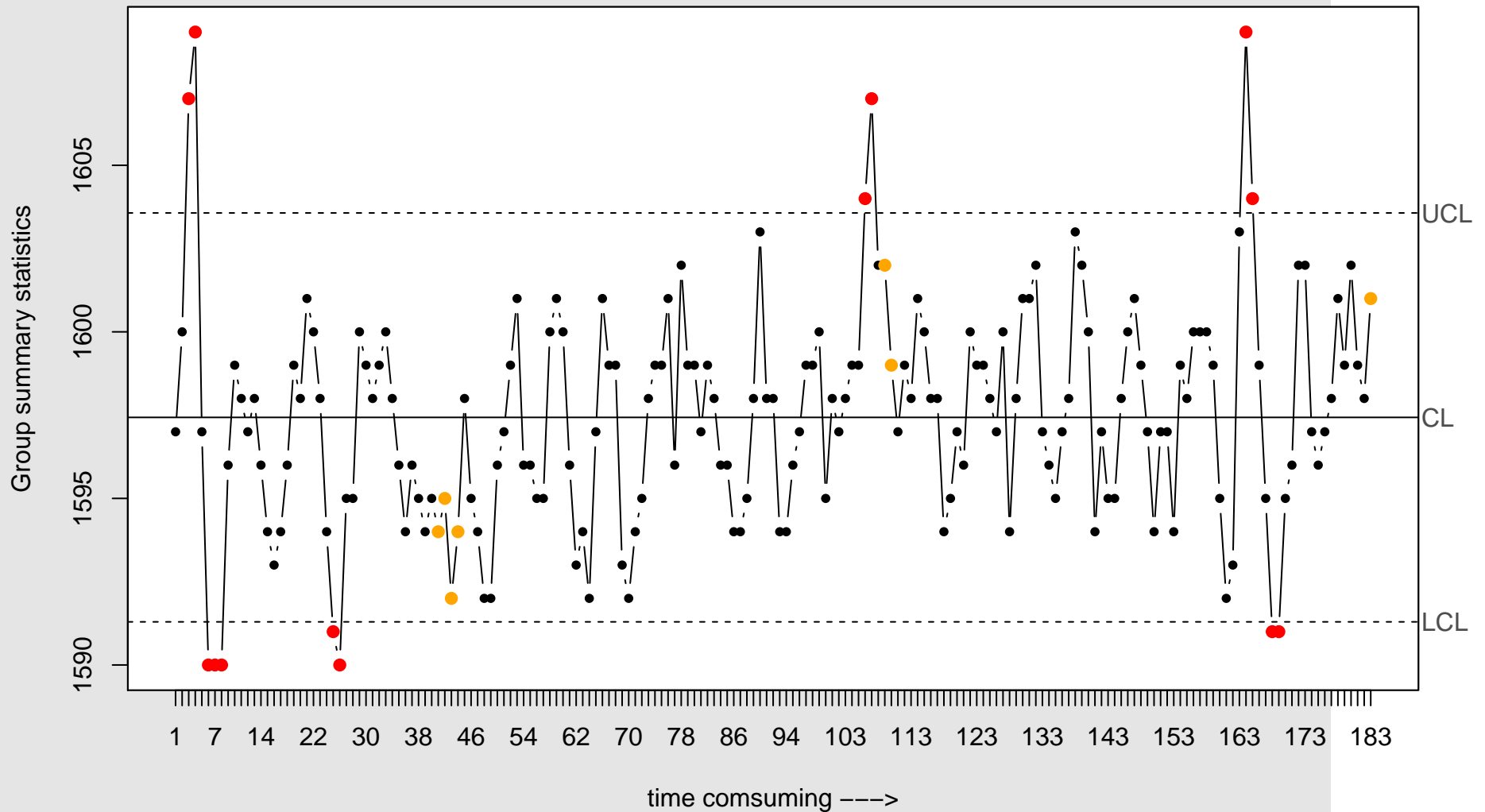
LCL = 1591.294
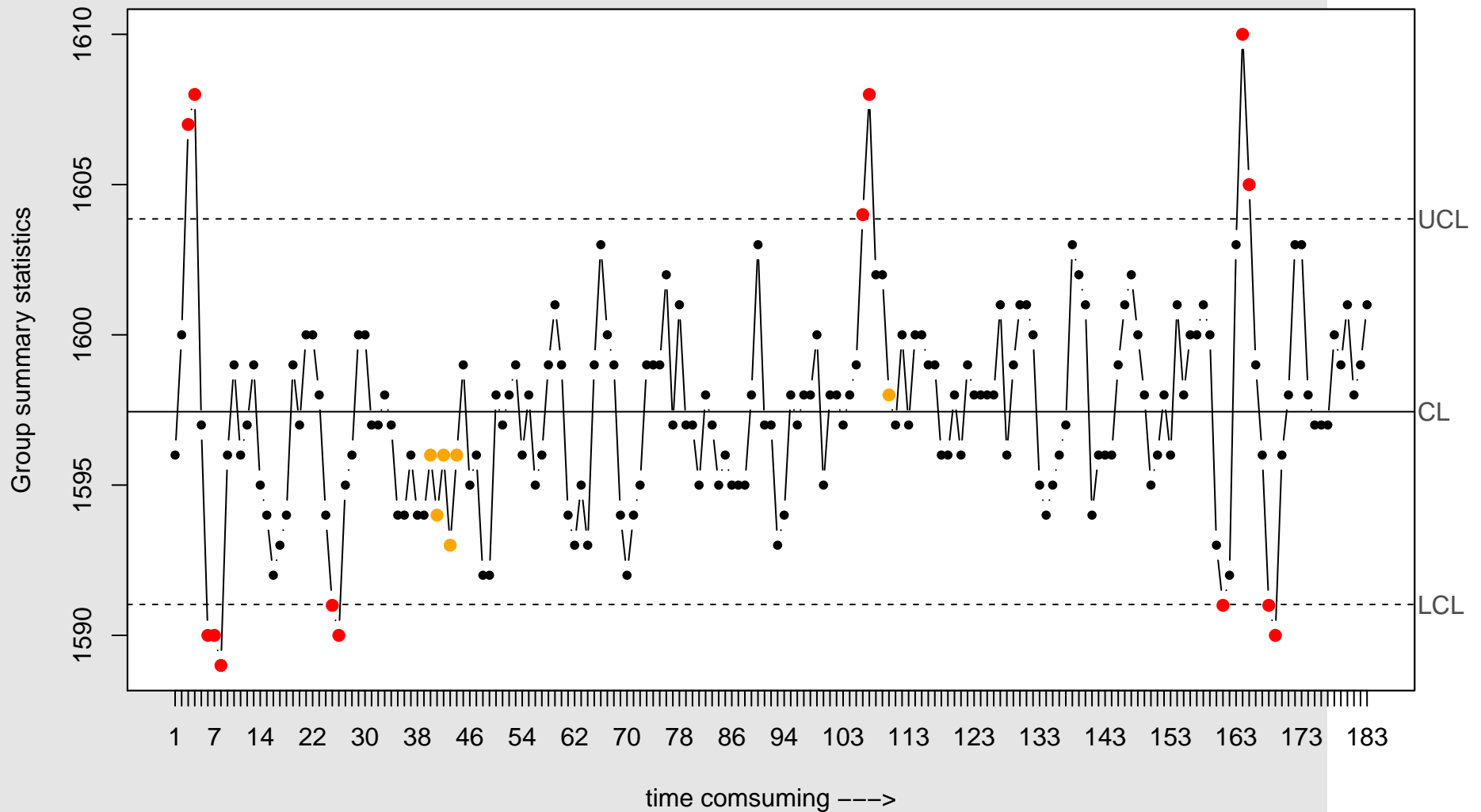UCL = 1603.569

Number beyond limits = 13
Number violating runs = 7

266th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1597.443   LCL = 1591.027   Number beyond limits = 14
StdDev = 2.138376   UCL = 1603.858   Number violating runs = 6

267th column point of this product

Group summary statistics

time comsuming ––––>
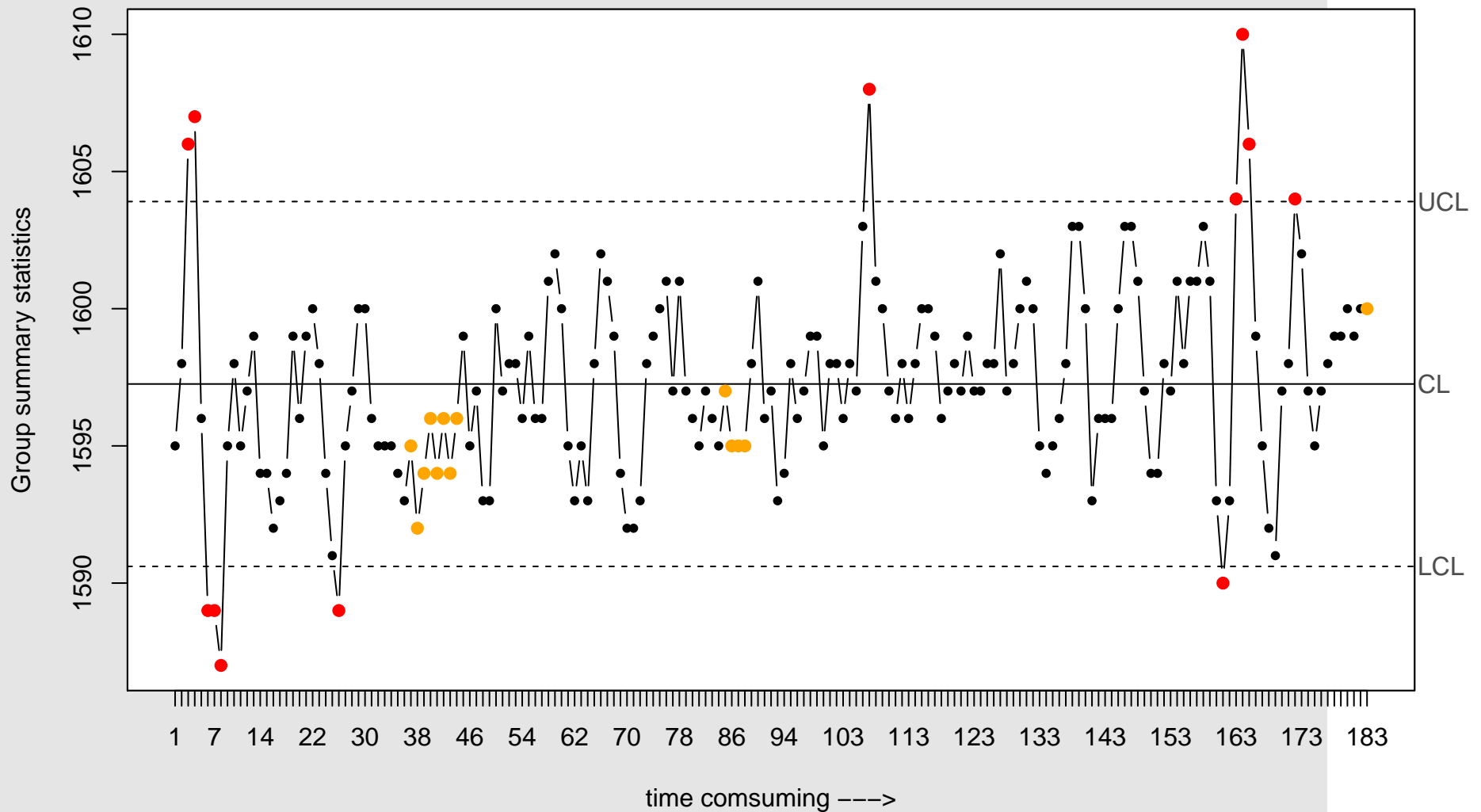
Number of groups = 183
Center = 1597.257   LCL = 1590.608   Number beyond limits = 12
StdDev = 2.216312   UCL = 1603.906   Number violating runs = 13

268th column point of this product

Group summary statistics

time comsuming –––>
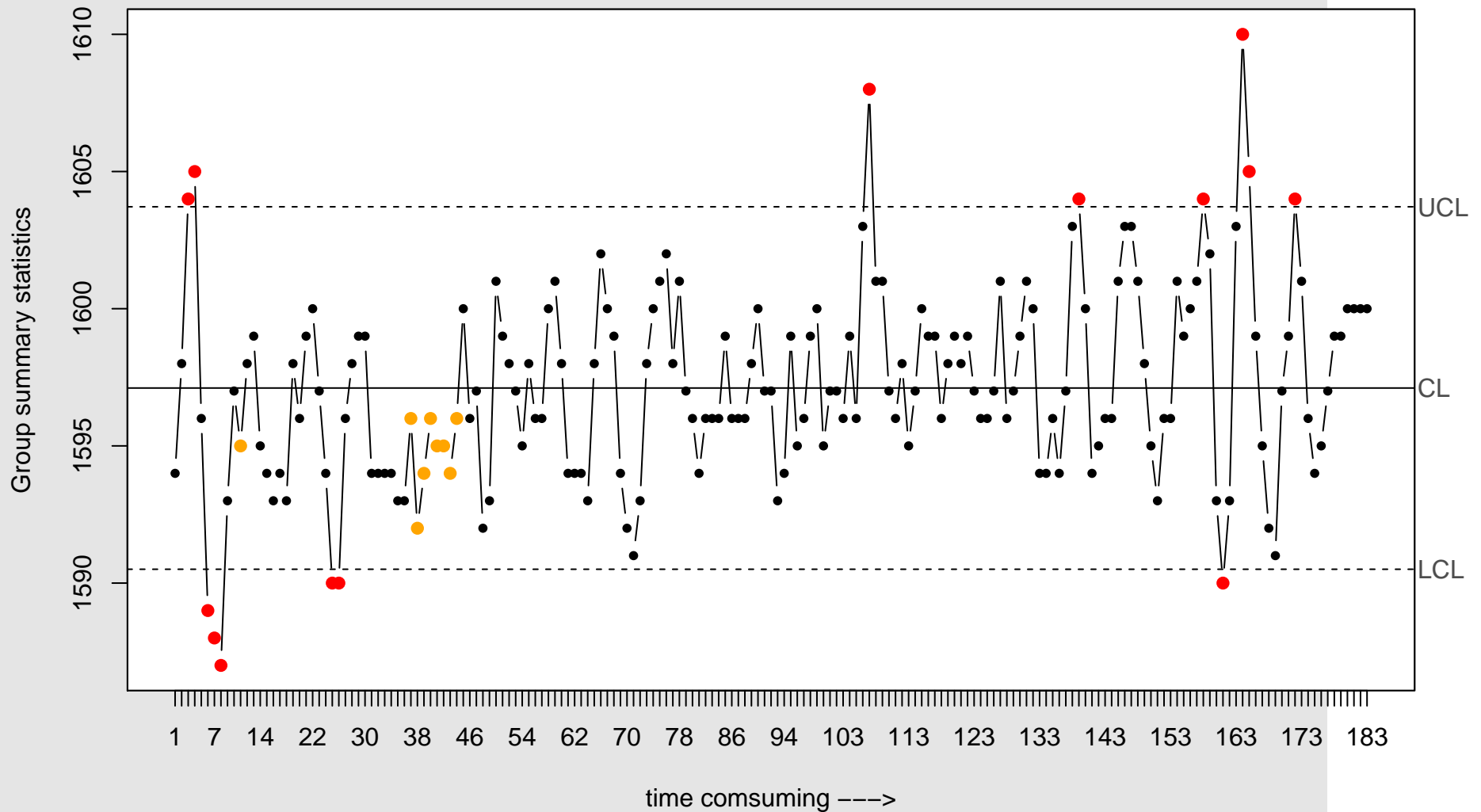
Number of groups = 183
Center = 1597.109   LCL = 1590.504   Number beyond limits = 14
StdDev = 2.201699   UCL = 1603.714   Number violating runs = 9

269th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1597.005   LCL = 1590.4   Number beyond limits = 12
StdDev = 2.201699   UCL = 1603.611   Number violating runs = 17

270th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1596.716
StdDev = 2.196828

LCL = 1590.125
UCL = 1603.306

Number beyond limits = 12
Number violating runs = 12

271th column point of this product
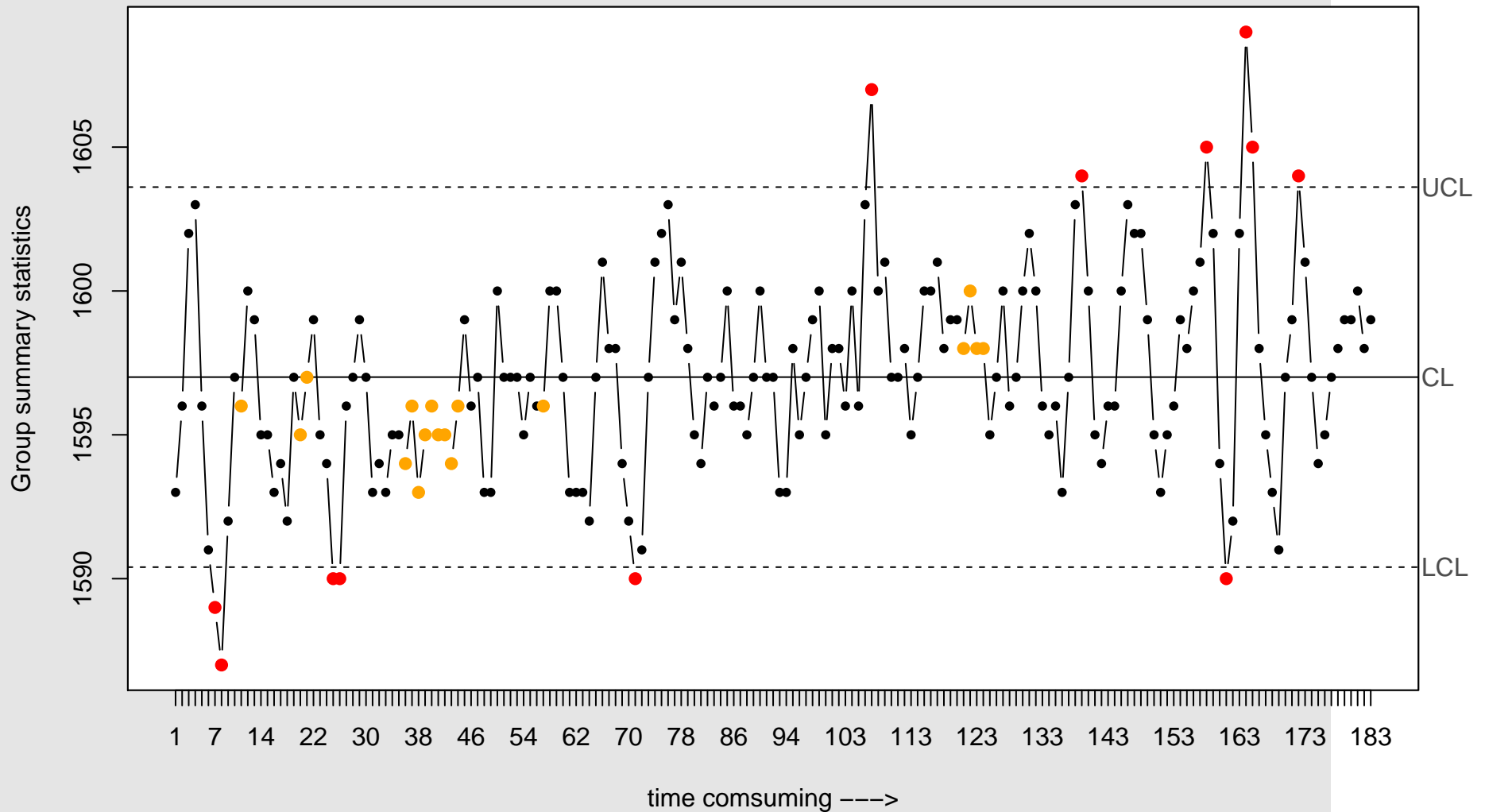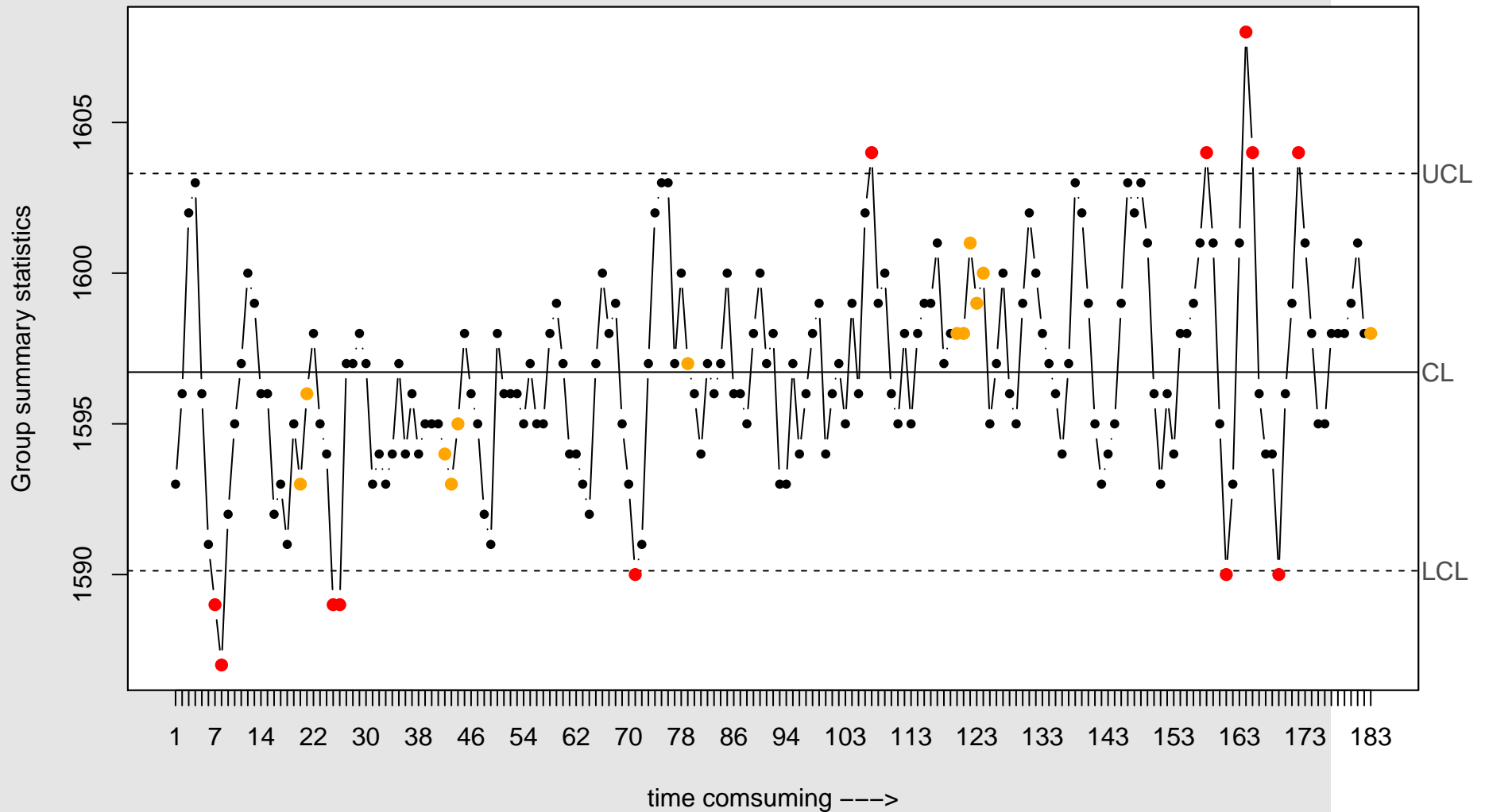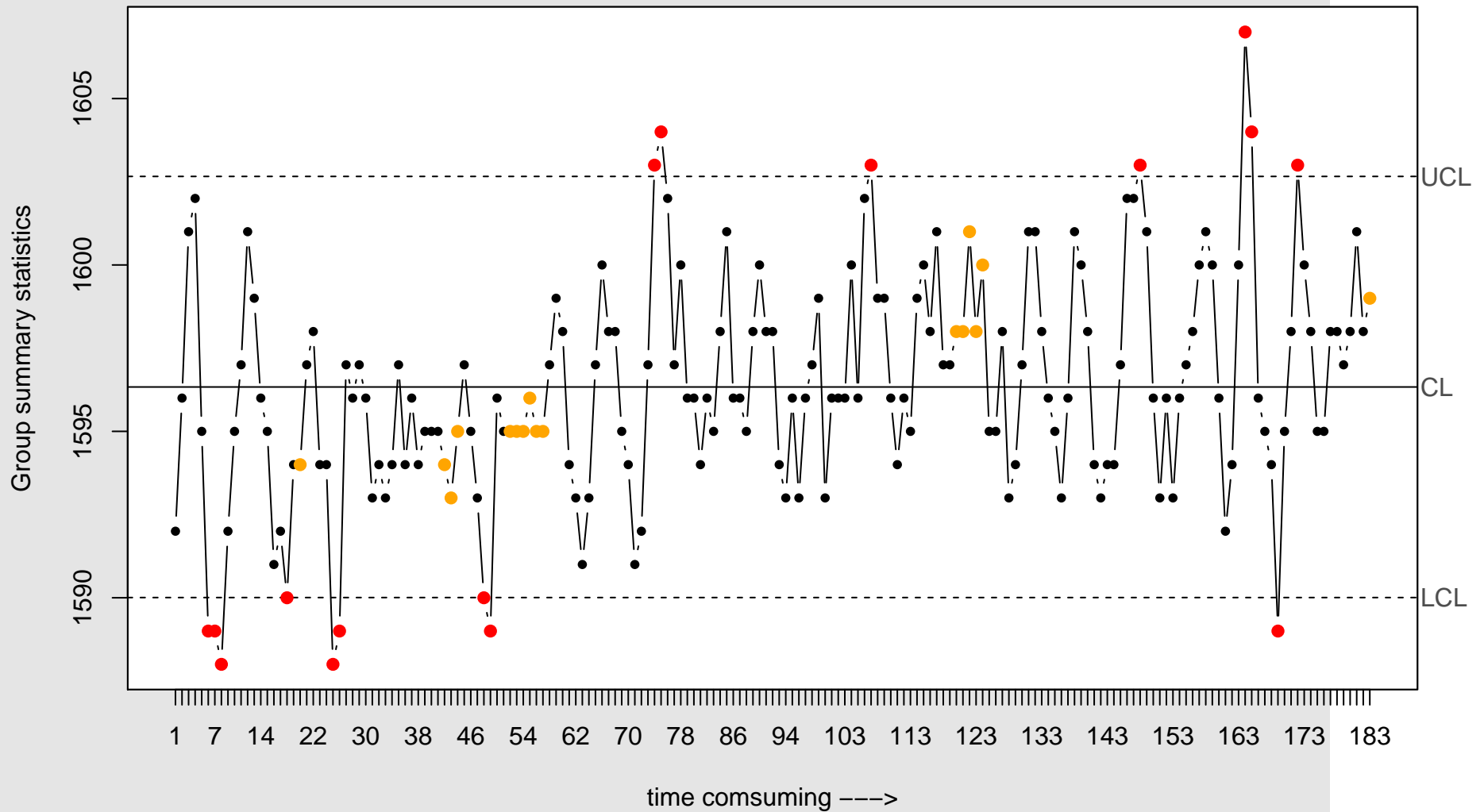

Group summary statistics

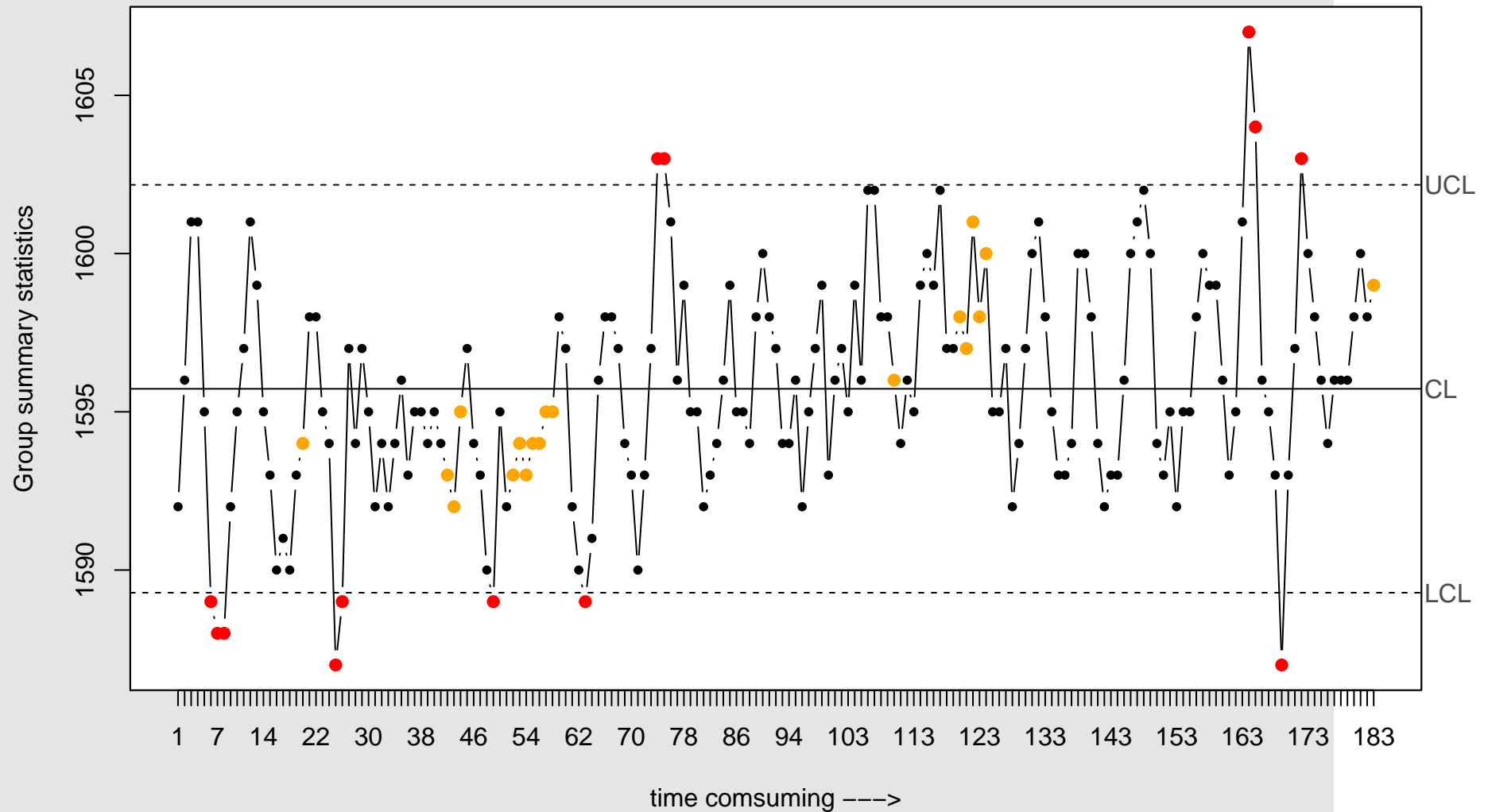time comsuming ---->

Number of groups = 183
Center = 1596.333
StdDev = 2.10915

LCL = 1590.006
UCL = 1602.661

Number beyond limits = 16
Number violating runs = 16

272th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1595.727   LCL = 1589.282   Number beyond limits = 13
StdDev = 2.148118   UCL = 1602.171   Number violating runs = 18

273th column point of this product

Group summary statistics

time comsuming ---->
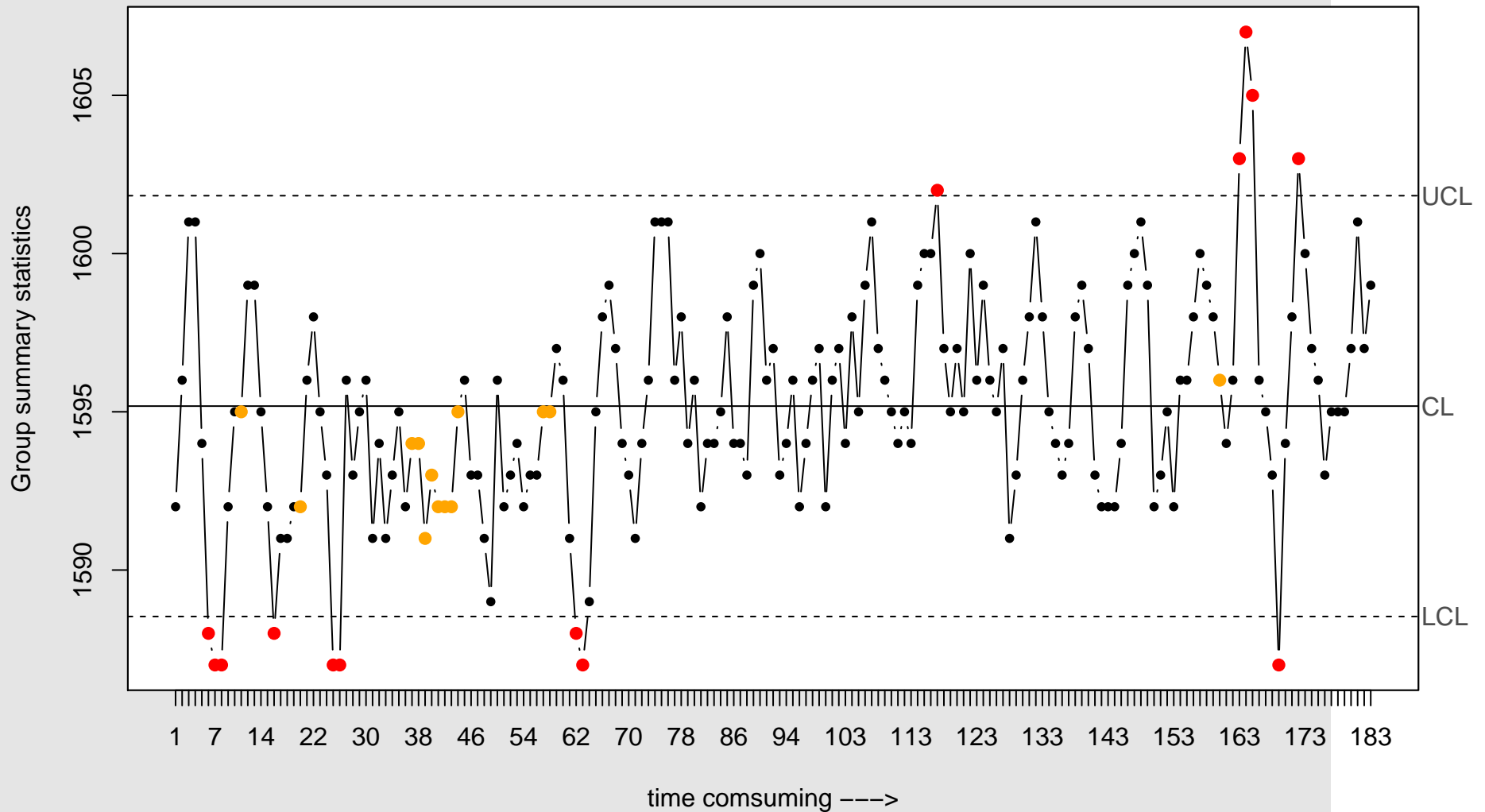
Number of groups = 183
Center = 1595.18   LCL = 1588.531   Number beyond limits = 14
StdDev = 2.216312   UCL = 1601.829   Number violating runs = 13

274th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1594.601   LCL = 1587.66   Number beyond limits = 11
StdDev = 2.313732   UCL = 1601.542   Number violating runs = 11

275th column point of this product

Number of groups = 183
Center = 1593.94
StdDev = 2.342958
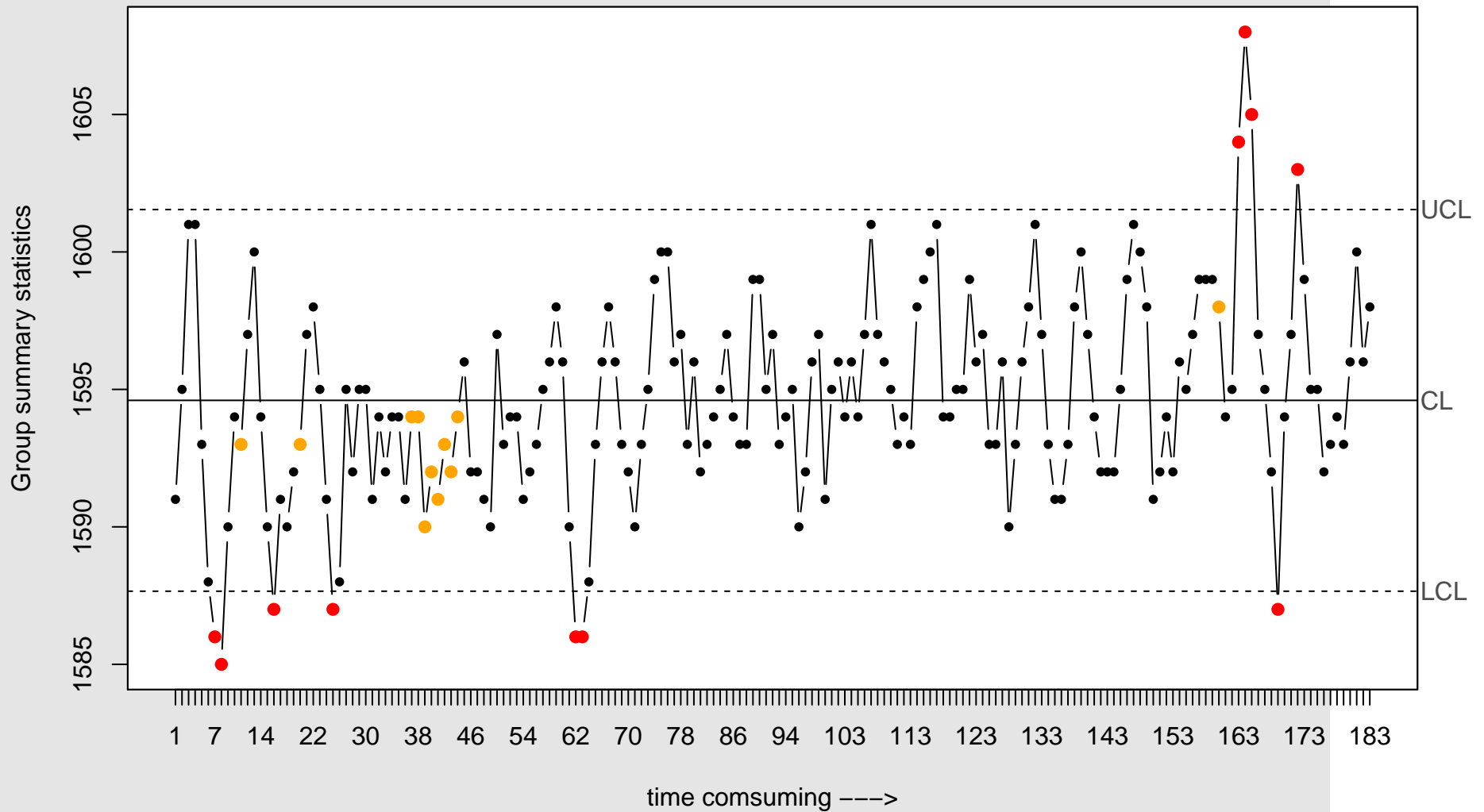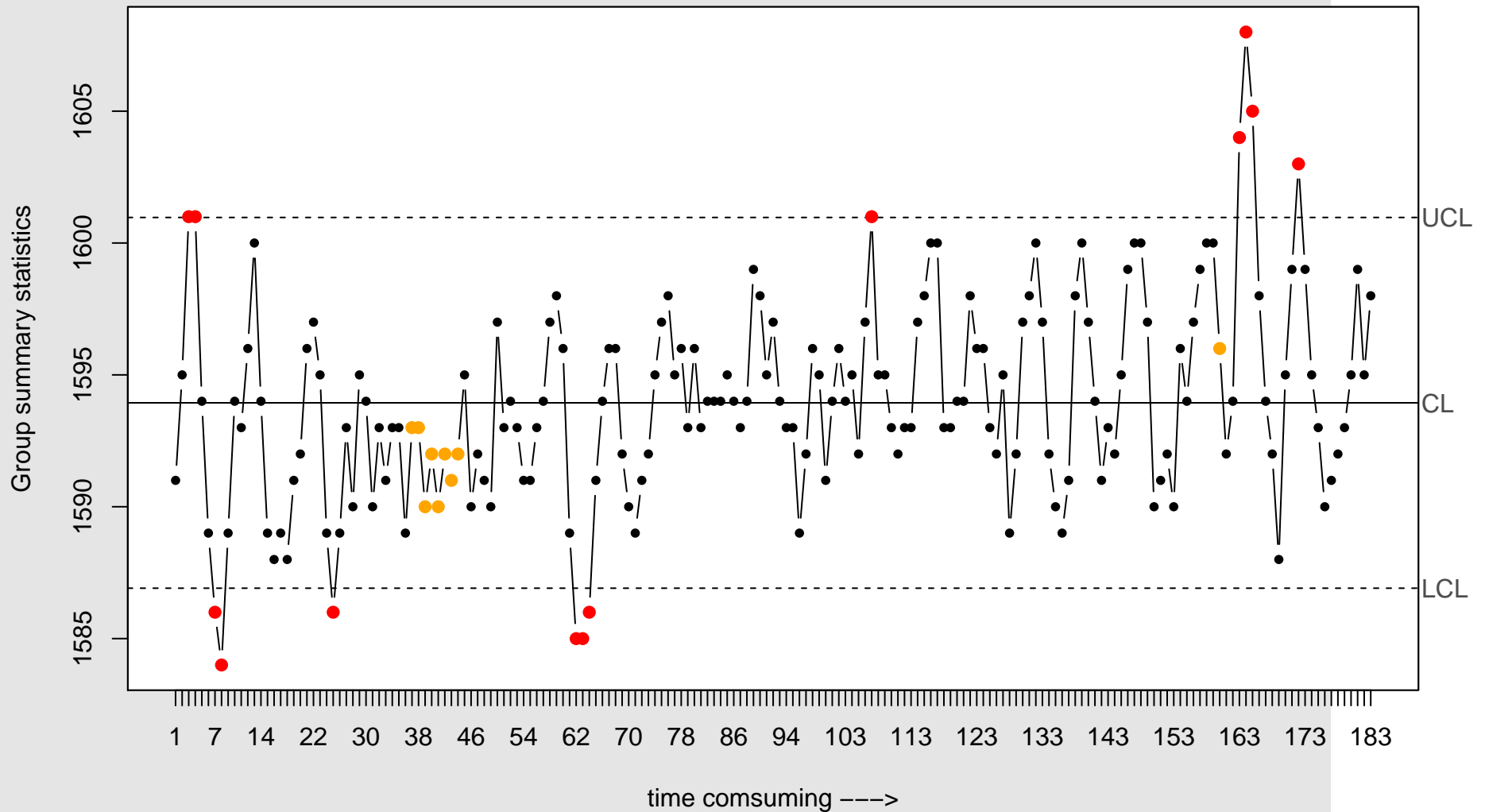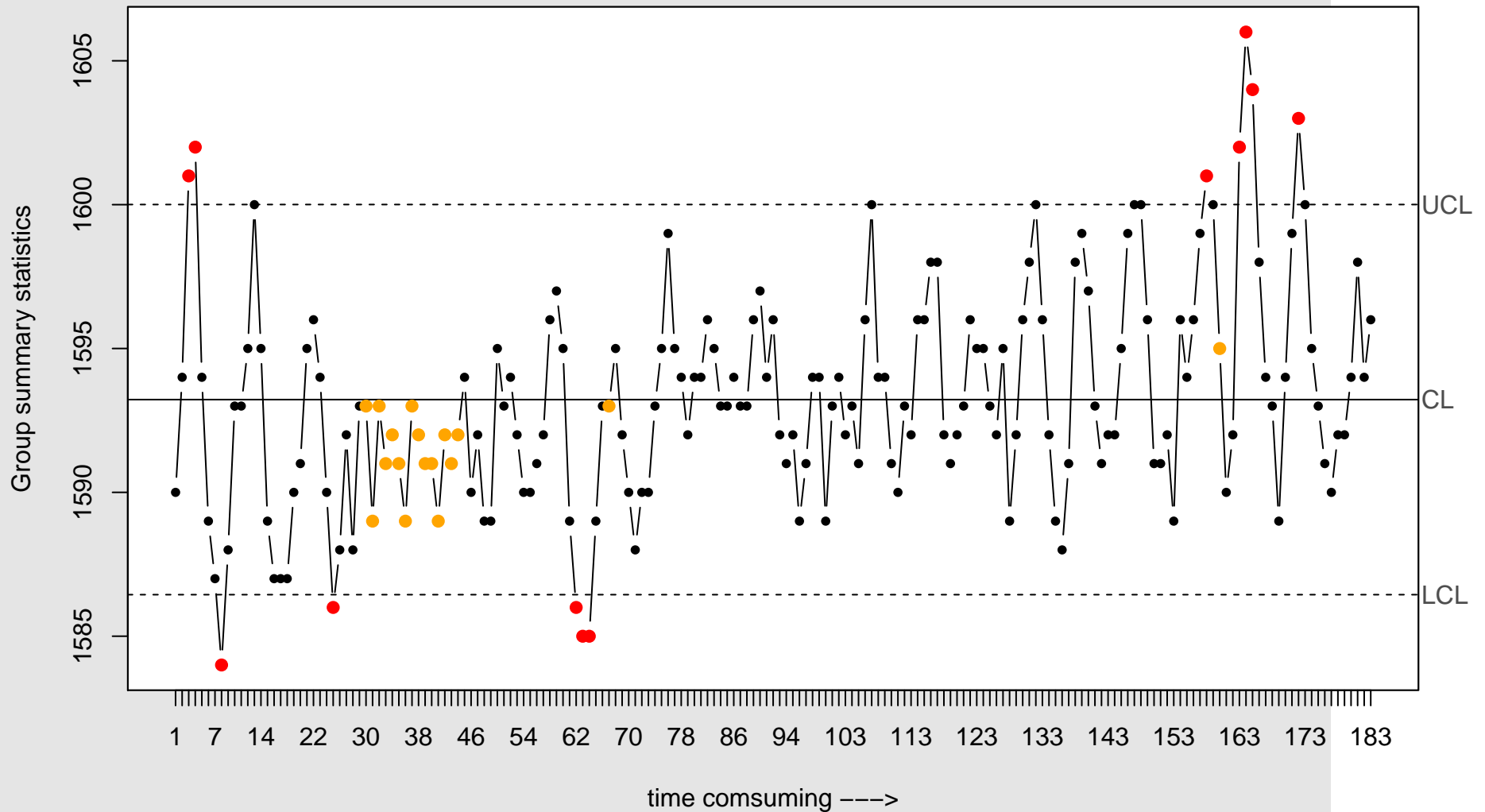
LCL = 1586.911
UCL = 1600.969

Number beyond limits = 13
Number violating runs = 9

276th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ----->

Number of groups = 183
Center = 1593.224   LCL = 1586.444   Number beyond limits = 12
StdDev = 2.260151   UCL = 1600.004   Number violating runs = 17

277th column point of this product

Group summary statistics

time comsuming --->
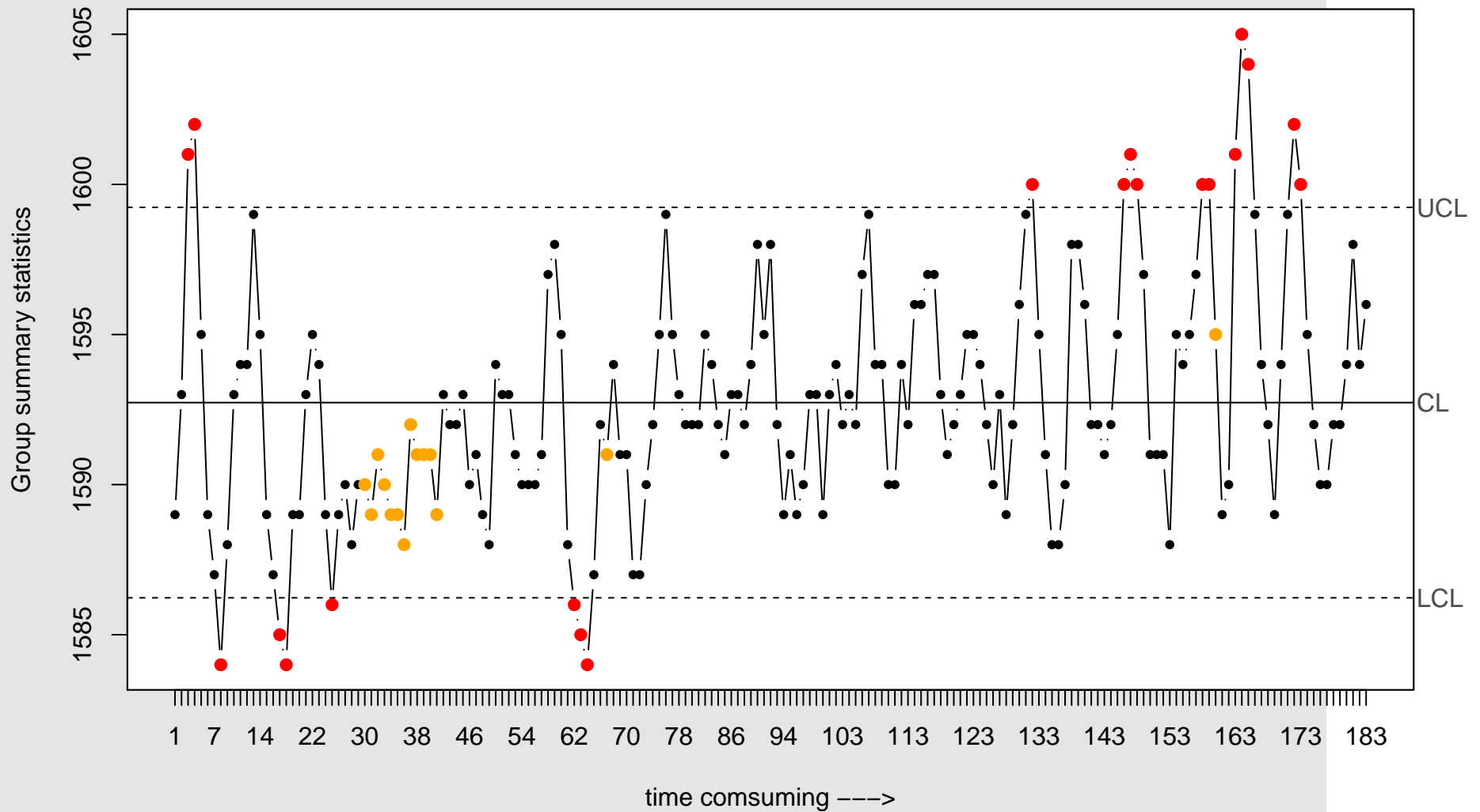
Number of groups = 183
Center = 1592.732
StdDev = 2.167602
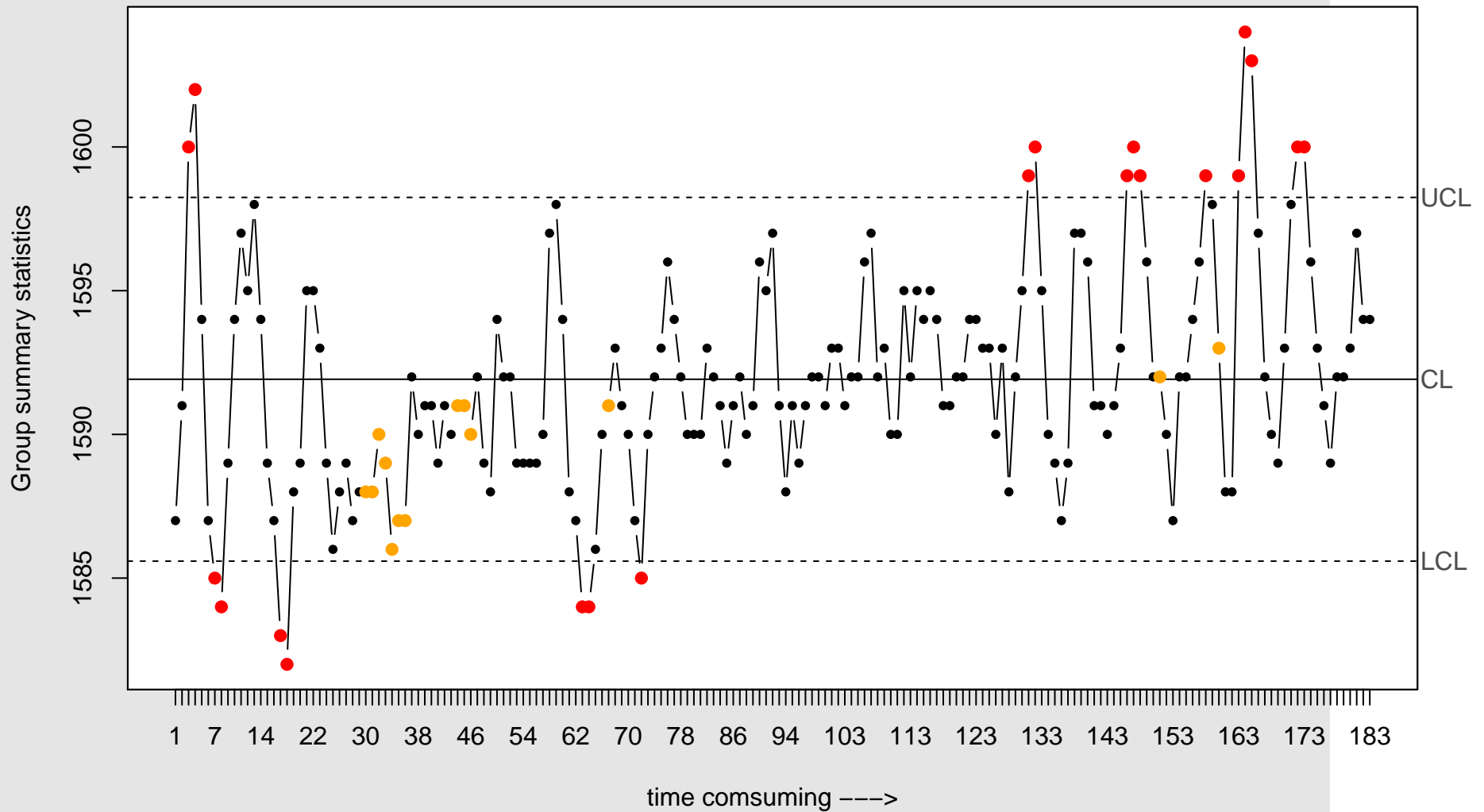
LCL = 1586.229
UCL = 1599.235

Number beyond limits = 20
Number violating runs = 14

278th column point of this product

Group summary statistics

UCL

CL

LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ---->

Number of groups = 183
Center = 1591.918   LCL = 1585.591   Number beyond limits = 20
StdDev = 2.10915   UCL = 1598.245   Number violating runs = 13

279th column point of this product

Group summary statistics

UCL

CL

LCL

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ––––>
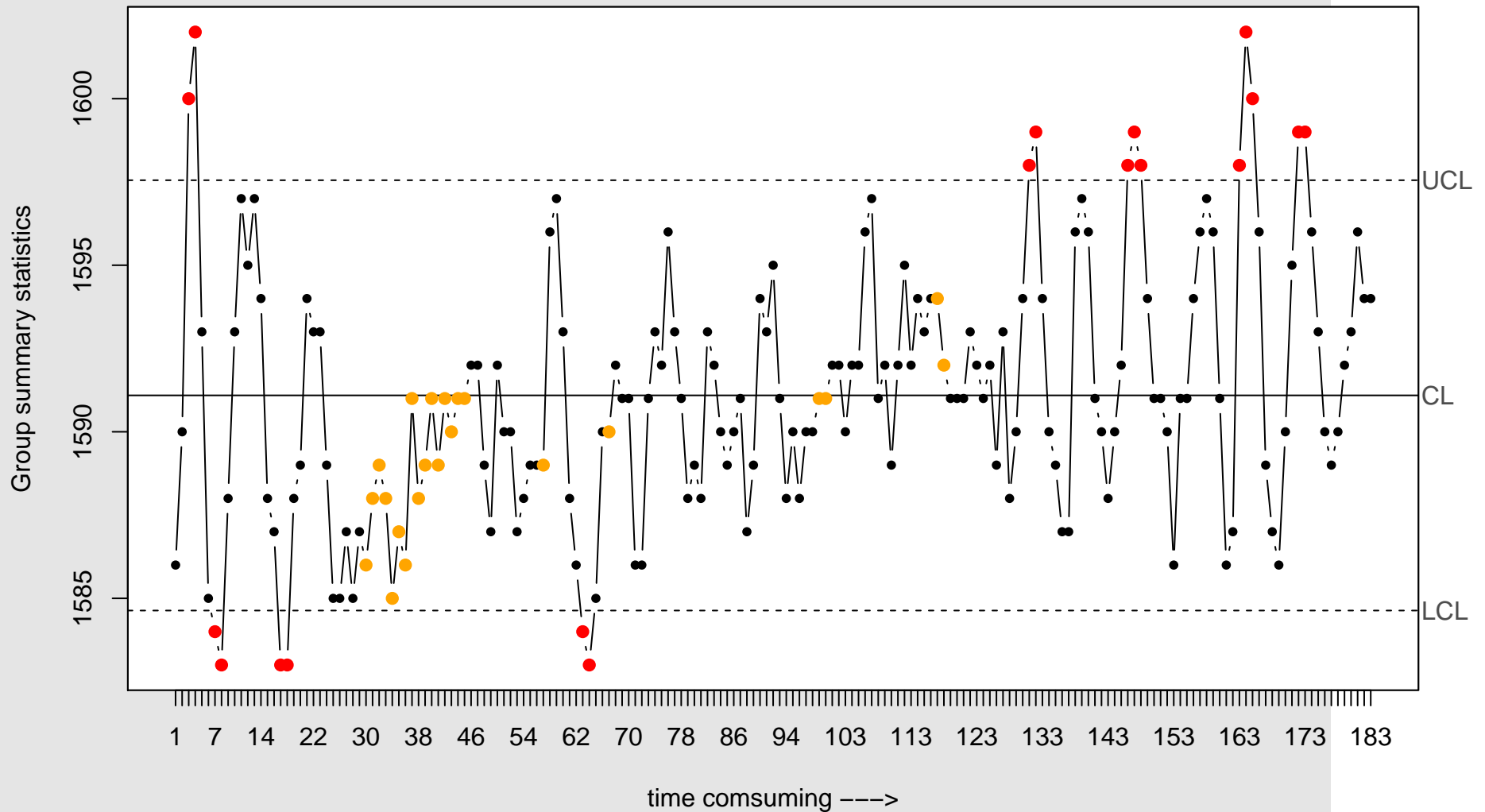
Number of groups = 183
Center = 1591.093   LCL = 1584.634   Number beyond limits = 18
StdDev = 2.152989   UCL = 1597.552   Number violating runs = 22

280th column point of this product

Group summary statistics

time comsuming --->
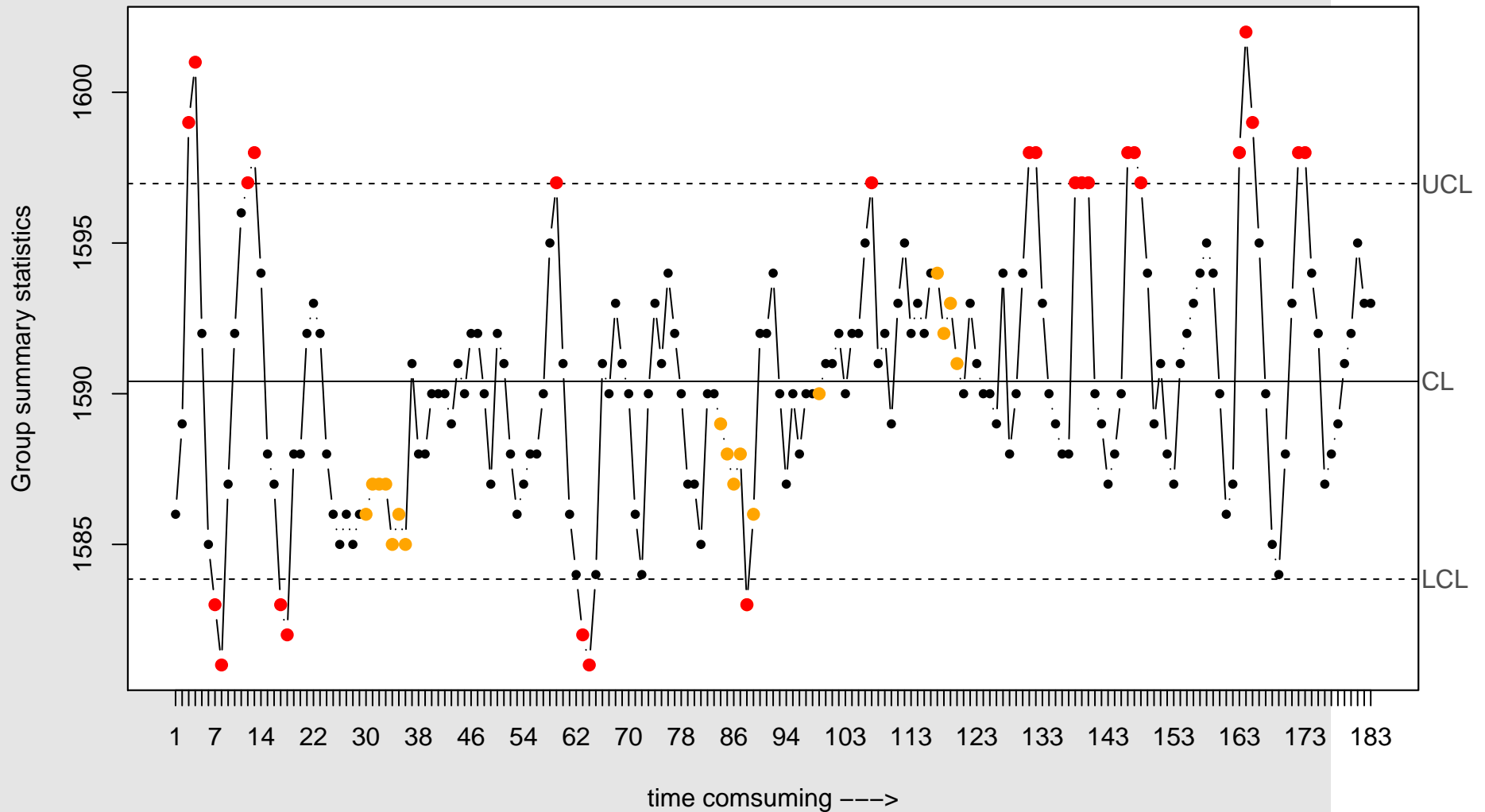
Number of groups = 183
Center = 1590.41
StdDev = 2.187086
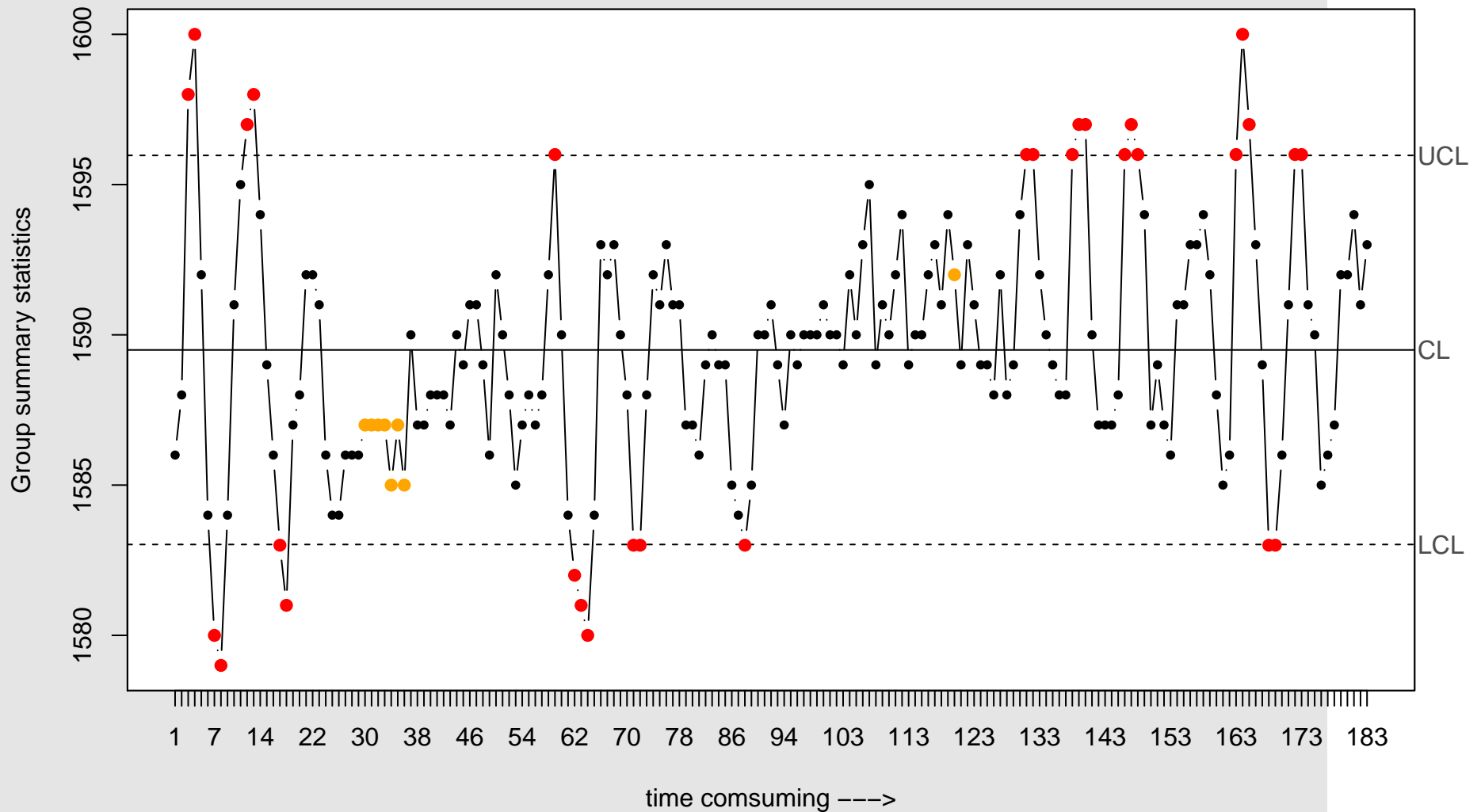
LCL = 1583.849
UCL = 1596.971

Number beyond limits = 26
Number violating runs = 18

281th column point of this product
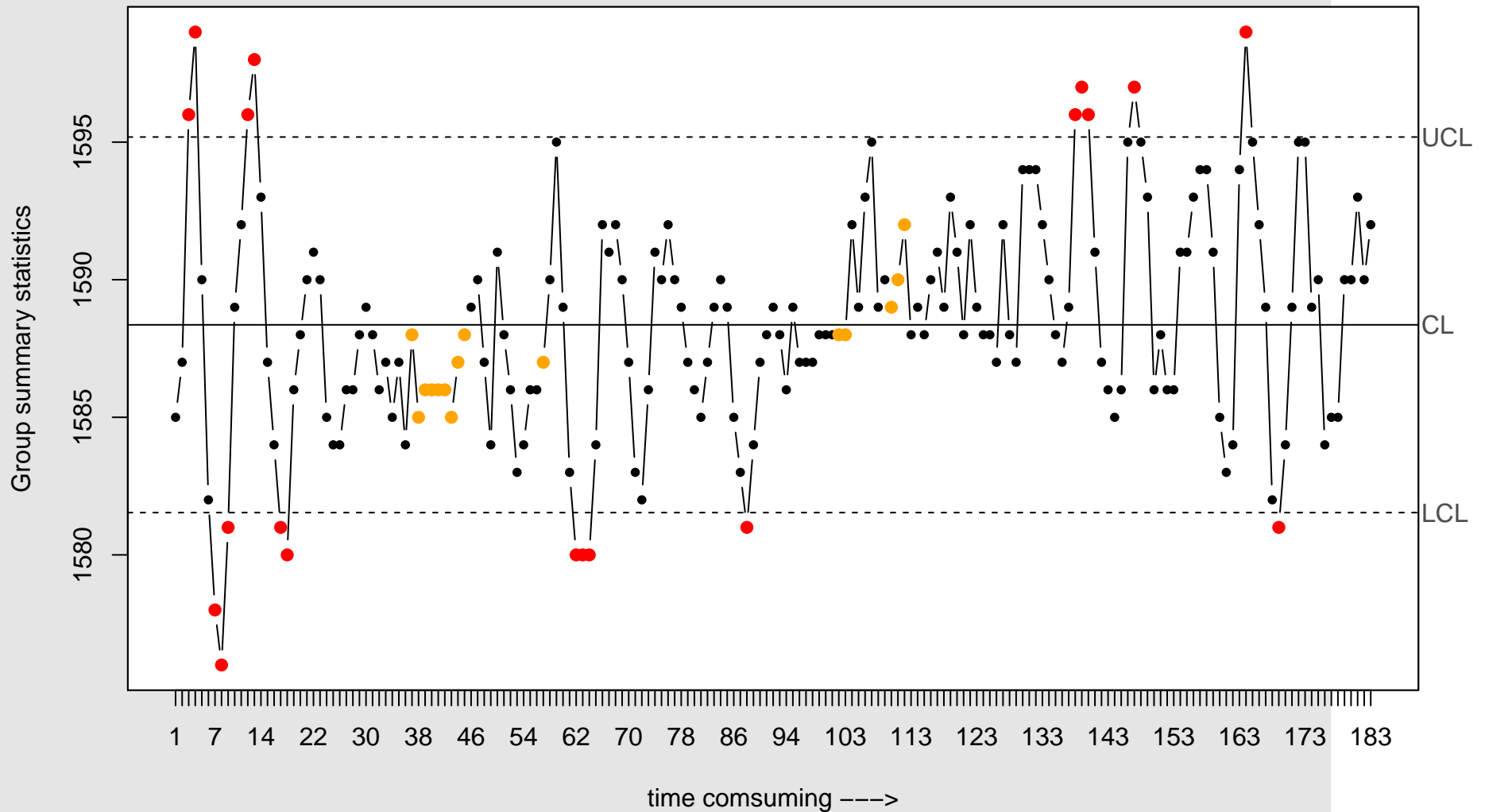

Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1589.497   LCL = 1583.024   Number beyond limits = 30
StdDev = 2.15786   UCL = 1595.971   Number violating runs = 8

282th column point of this product

Group summary statistics

time comsuming –––>

Number of groups = 183
Center = 1588.361   LCL = 1581.536   Number beyond limits = 19
StdDev = 2.274764   UCL = 1595.185   Number violating runs = 15

283th column point of this product

Group summary statistics

time comsuming --->
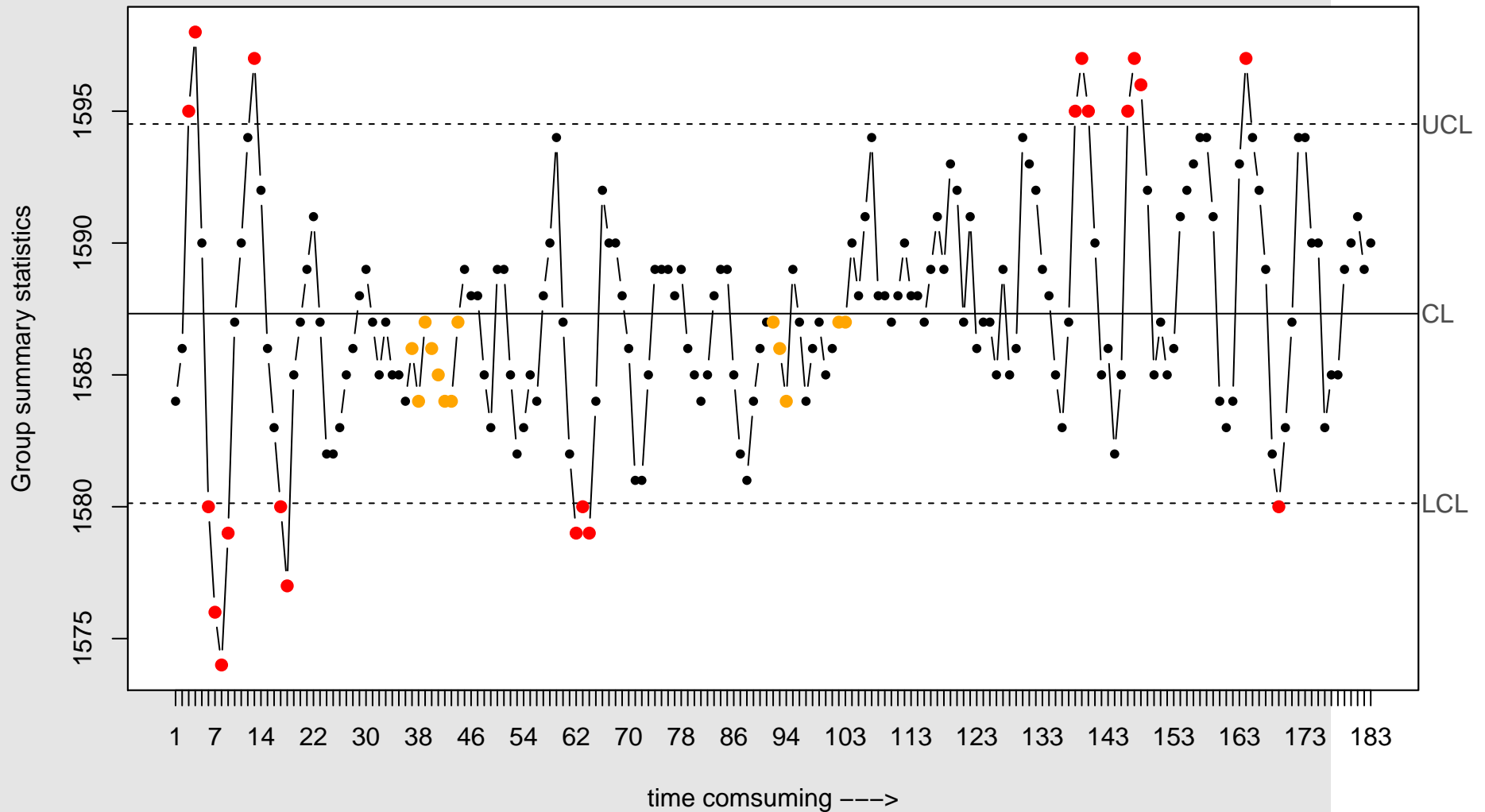
Number of groups = 183
Center = 1587.322
StdDev = 2.39654
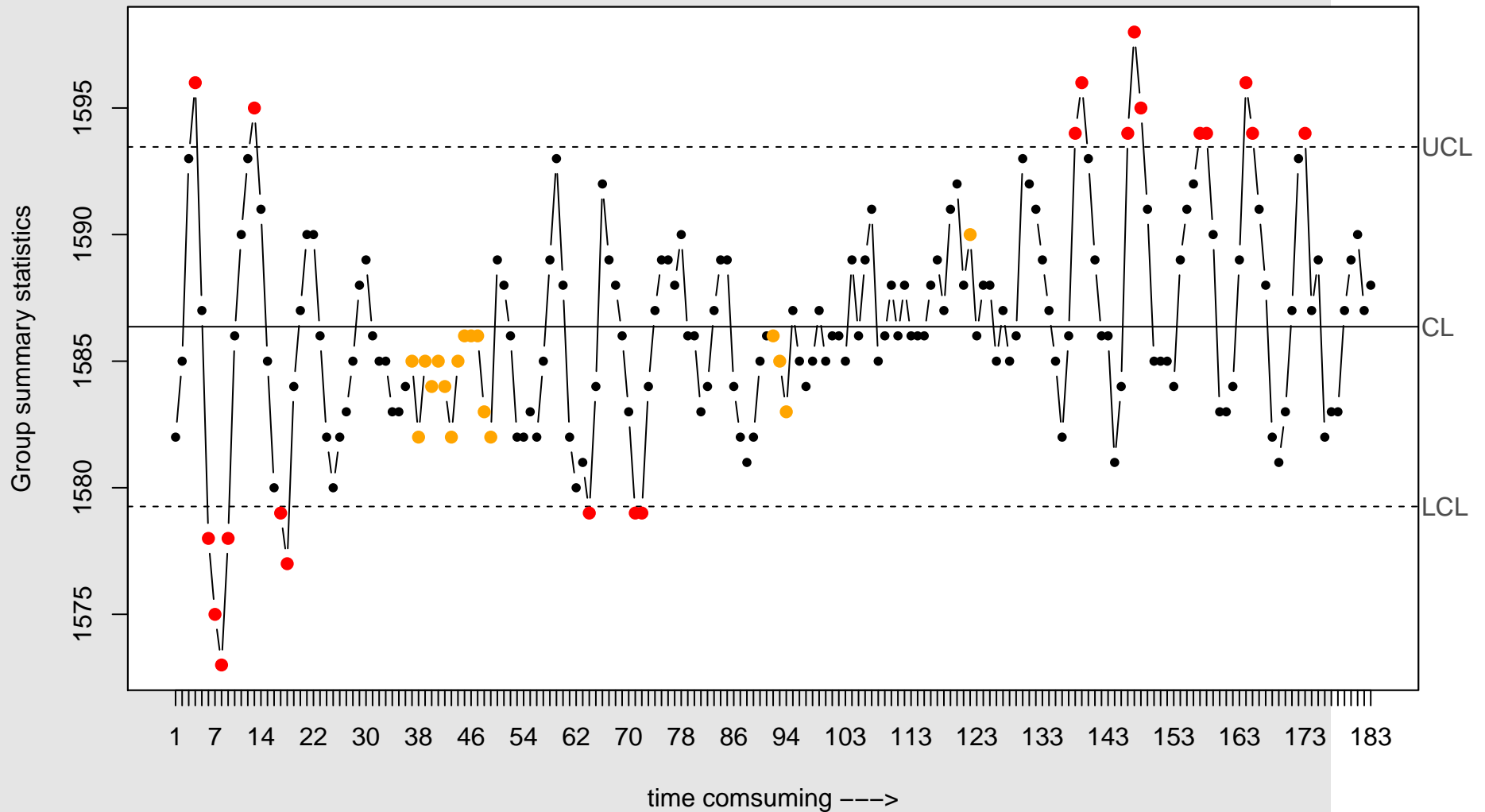
LCL = 1580.133
UCL = 1594.512

Number beyond limits = 20
Number violating runs = 13

284th column point of this product

Group summary statistics

UCL

CL

LCL

1595

1590

1585

1580

1575

1   7   14   22   30   38   46   54   62   70   78   86   94   103   113   123   133   143   153   163   173   183

time comsuming ––––>

Number of groups = 183
Center = 1586.361   LCL = 1579.259   Number beyond limits = 21
StdDev = 2.367314   UCL = 1593.463   Number violating runs = 17

285th column point of this product

Group summary statistics

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ---->
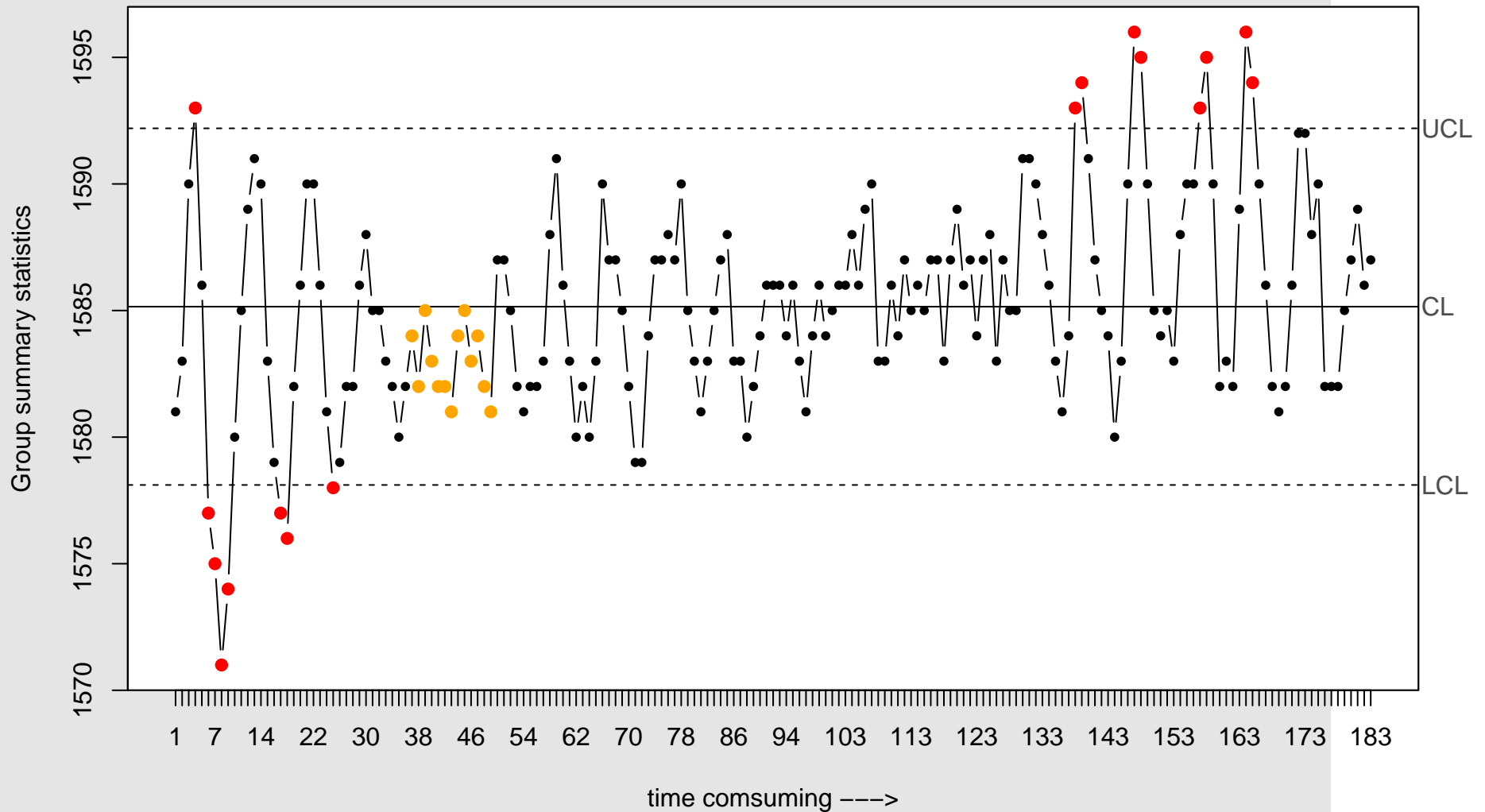
Number of groups = 183
Center = 1585.153   LCL = 1578.11   Number beyond limits = 16
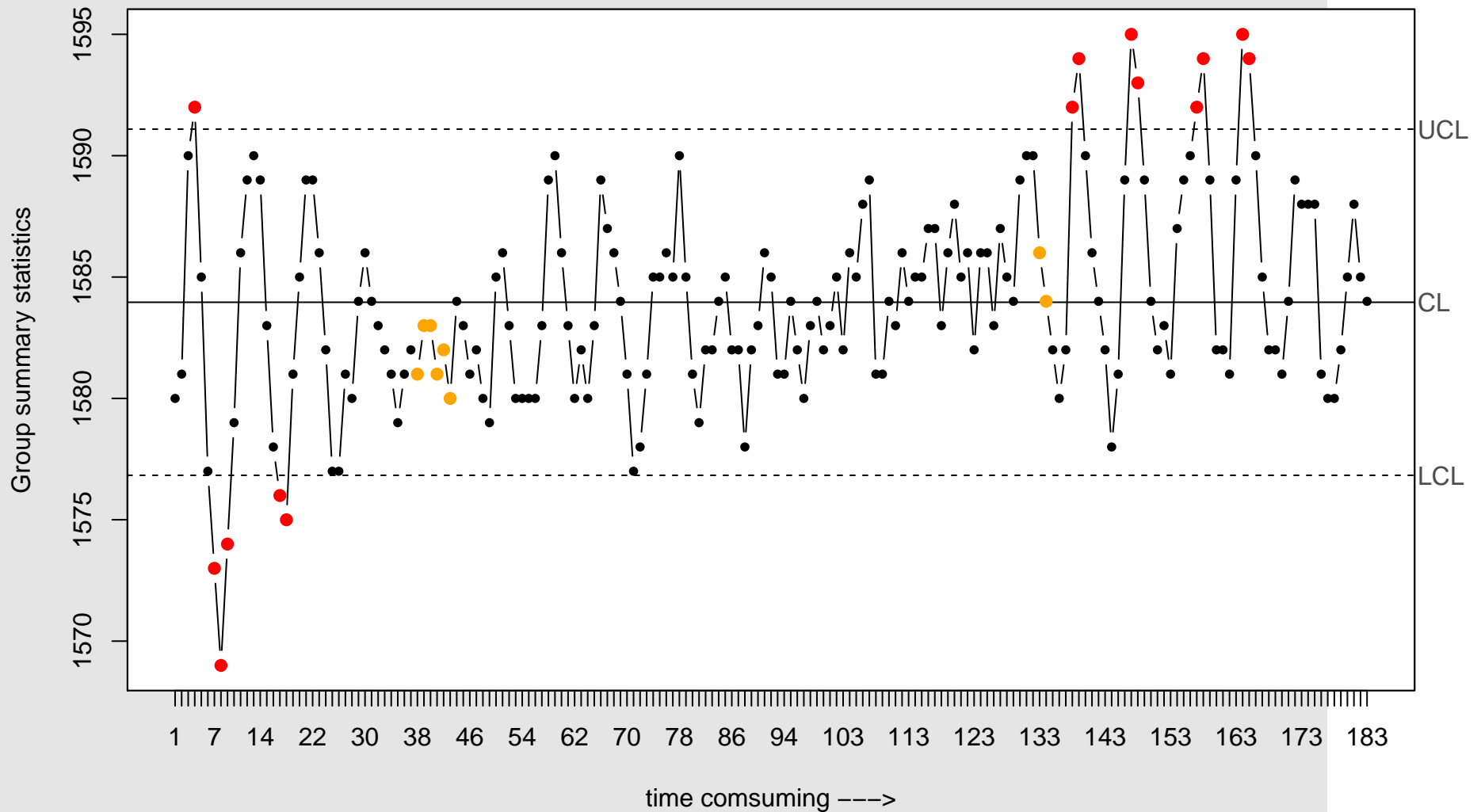StdDev = 2.347829   UCL = 1592.196   Number violating runs = 13

286th column point of this product

Number of groups = 183
Center = 1583.962   LCL = 1576.831   Number beyond limits = 14
StdDev = 2.377056   UCL = 1591.093   Number violating runs = 8

287th column point of this product

time comsuming ---->

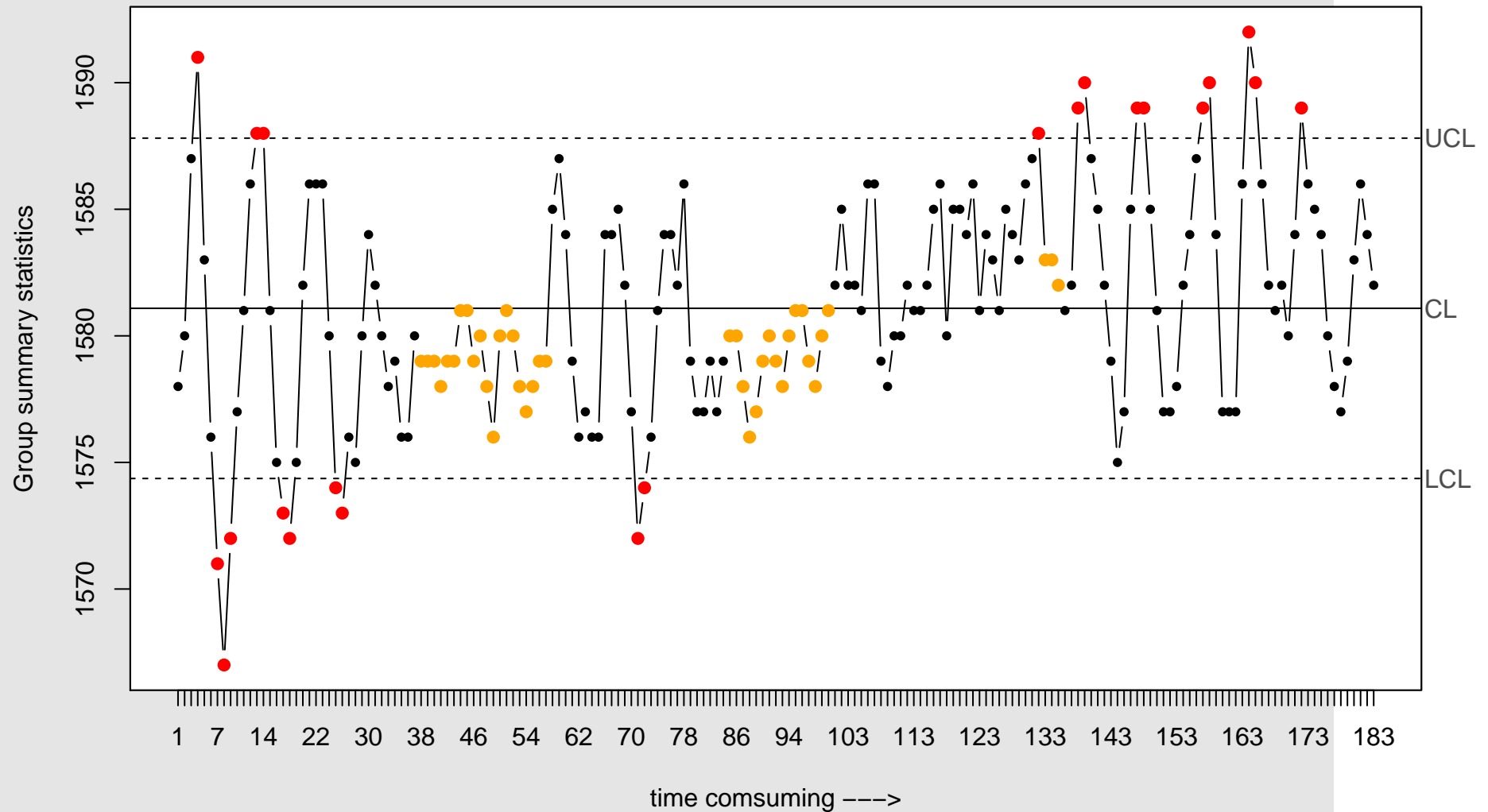Group summary statistics
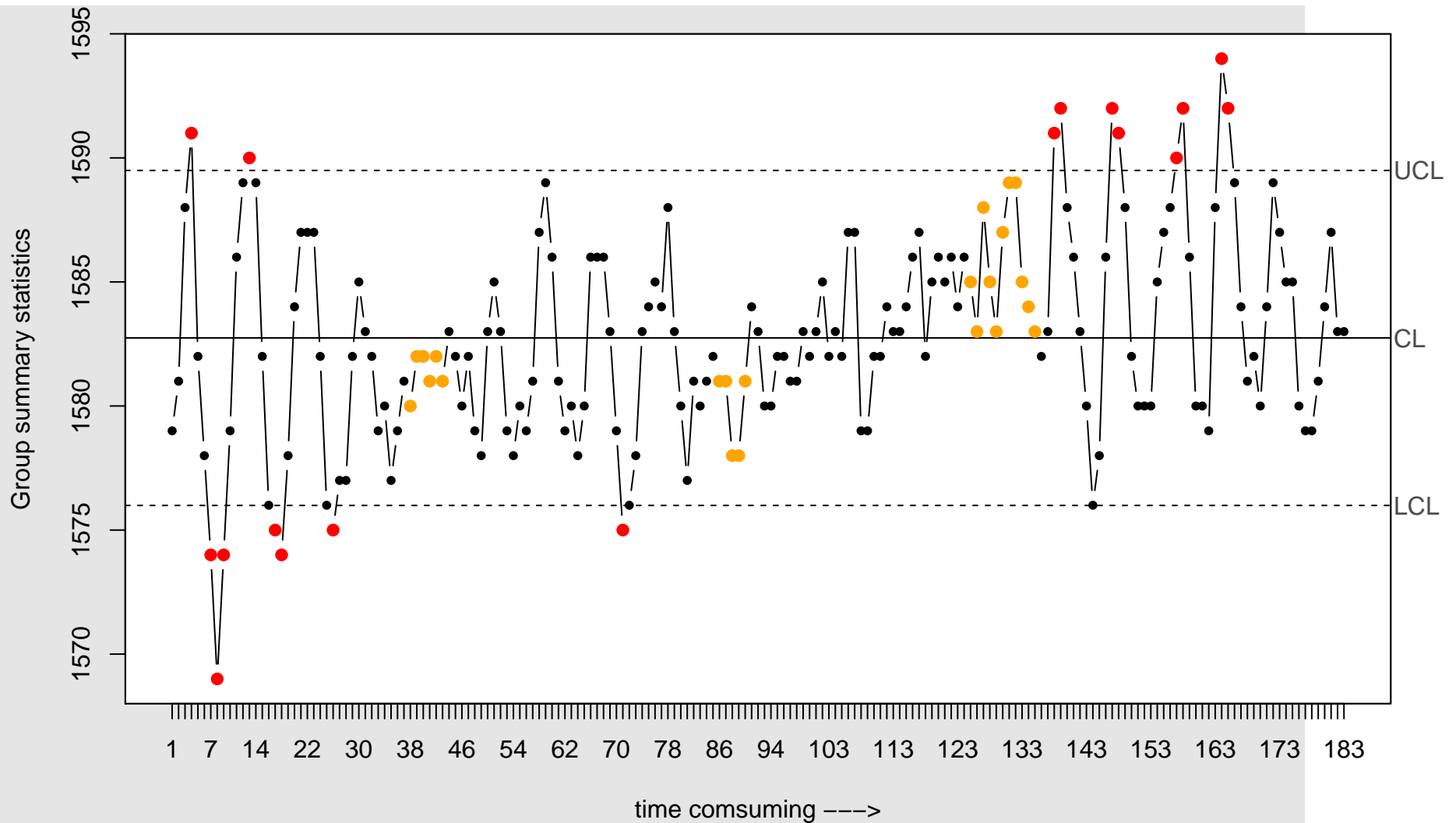
Number of groups = 183
Center = 1582.743
StdDev = 2.250409

LCL = 1575.992
UCL = 1589.494

Number beyond limits = 17
Number violating runs = 22

288th column point of this product

Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1581.087   LCL = 1574.365   Number beyond limits = 22
StdDev = 2.240667   UCL = 1587.809   Number violating runs = 39

289th column point of this product

Group summary statistics

time comsuming ---->

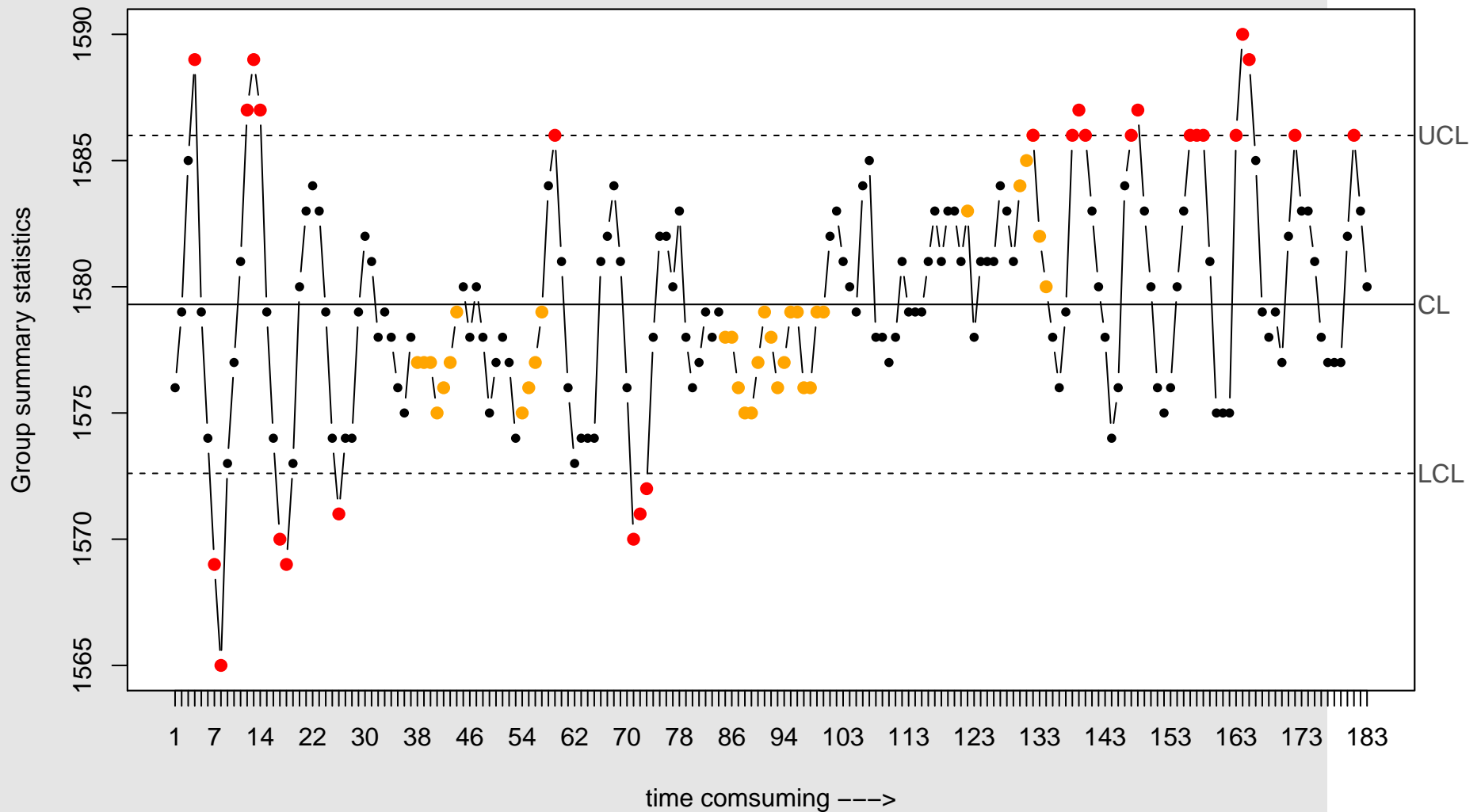Number of groups = 183
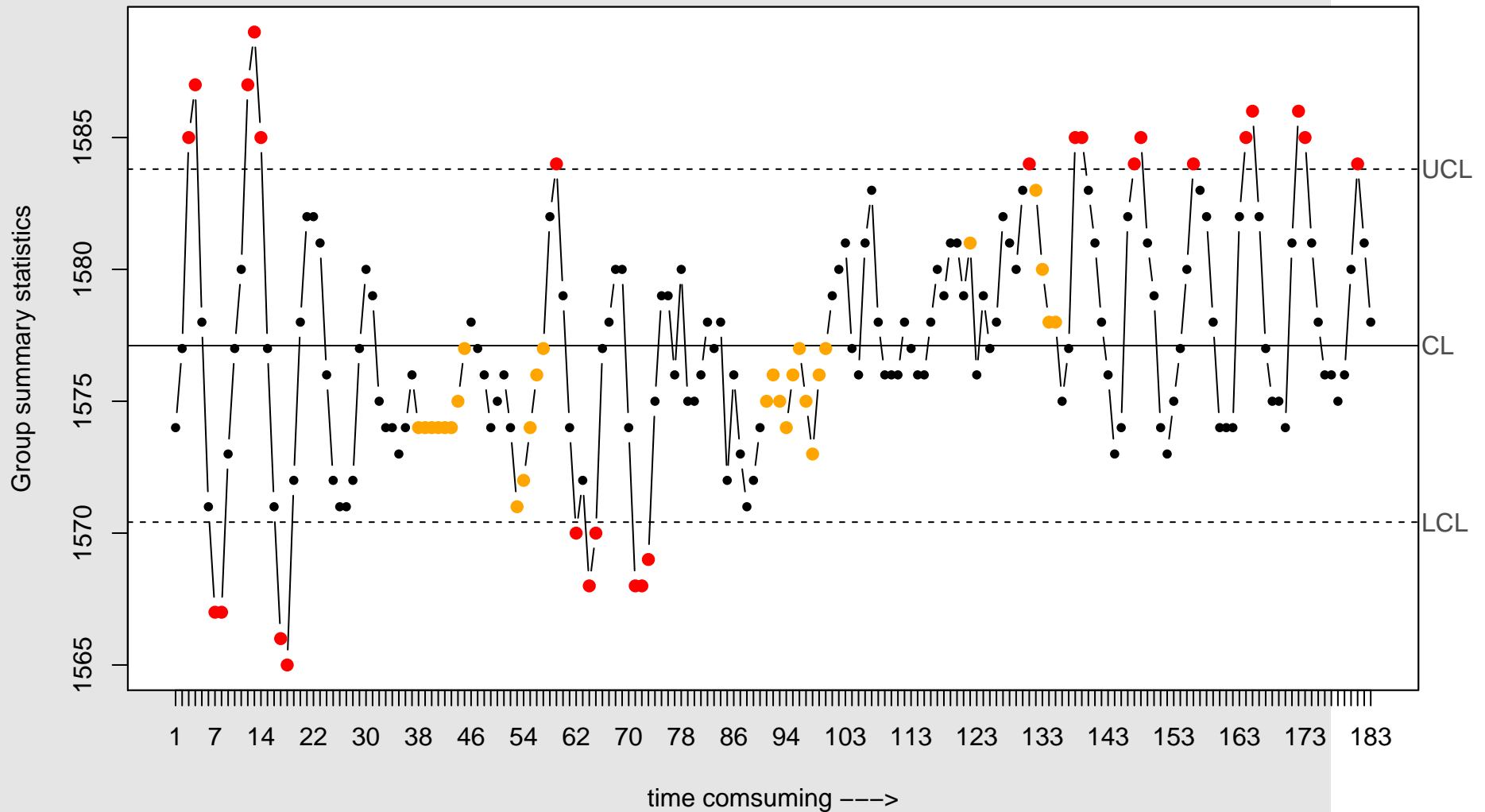Center = 1579.301
StdDev = 2.230925

LCL = 1572.608
UCL = 1585.993

Number beyond limits = 27
Number violating runs = 33

290th column point of this product

Number of groups = 183
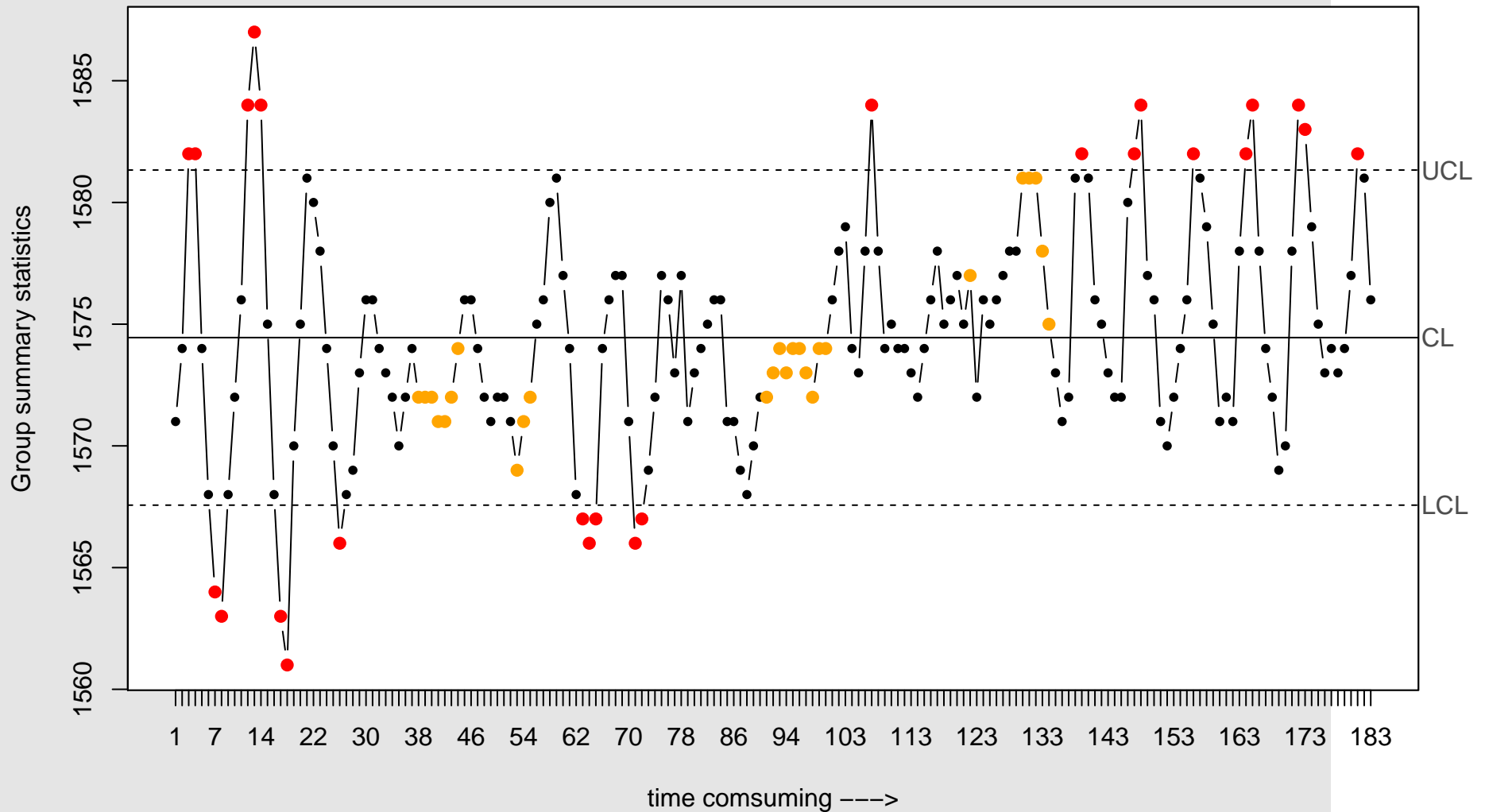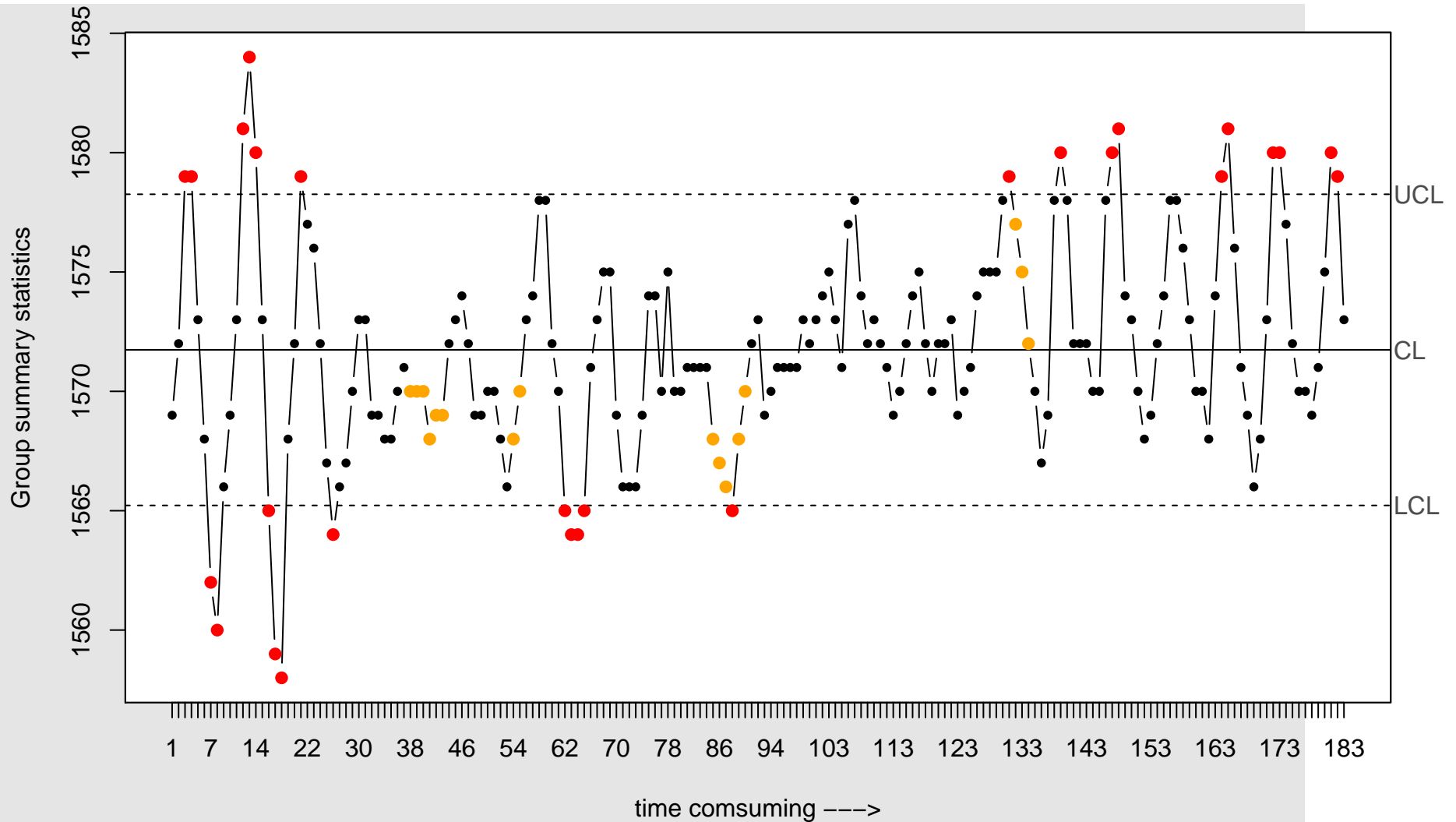Center = 1577.109   LCL = 1570.417   Number beyond limits = 27
StdDev = 2.230925   UCL = 1583.802   Number violating runs = 28

291th column point of this product

Group summary statistics

UCL

CL

LCL

time comsuming ––––>

Number of groups = 183
Center = 1574.448   LCL = 1567.565   Number beyond limits = 25
StdDev = 2.294248   UCL = 1581.331   Number violating runs = 26

292th column point of this product

Group summary statistics

1585
1580 ········ UCL
1575 CL
1570
1565 ········ LCL
1560

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ---->

Number of groups = 183
Center = 1571.738   LCL = 1565.22   Number beyond limits = 27
StdDev = 2.172473   UCL = 1578.255   Number violating runs = 17

293th column point of this product

Group summary statistics

time comsuming –––>
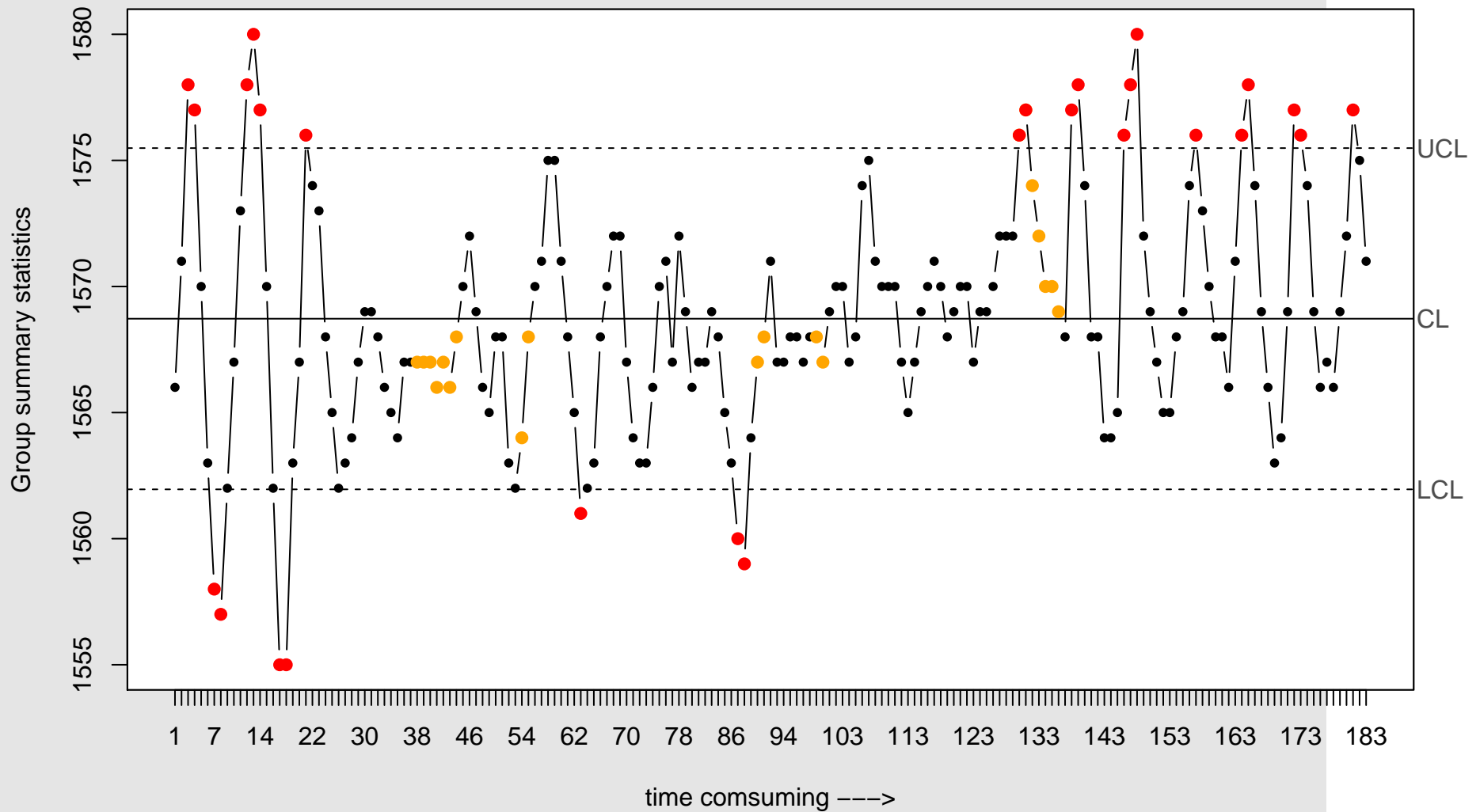
Number of groups = 183
Center = 1568.721
StdDev = 2.25528
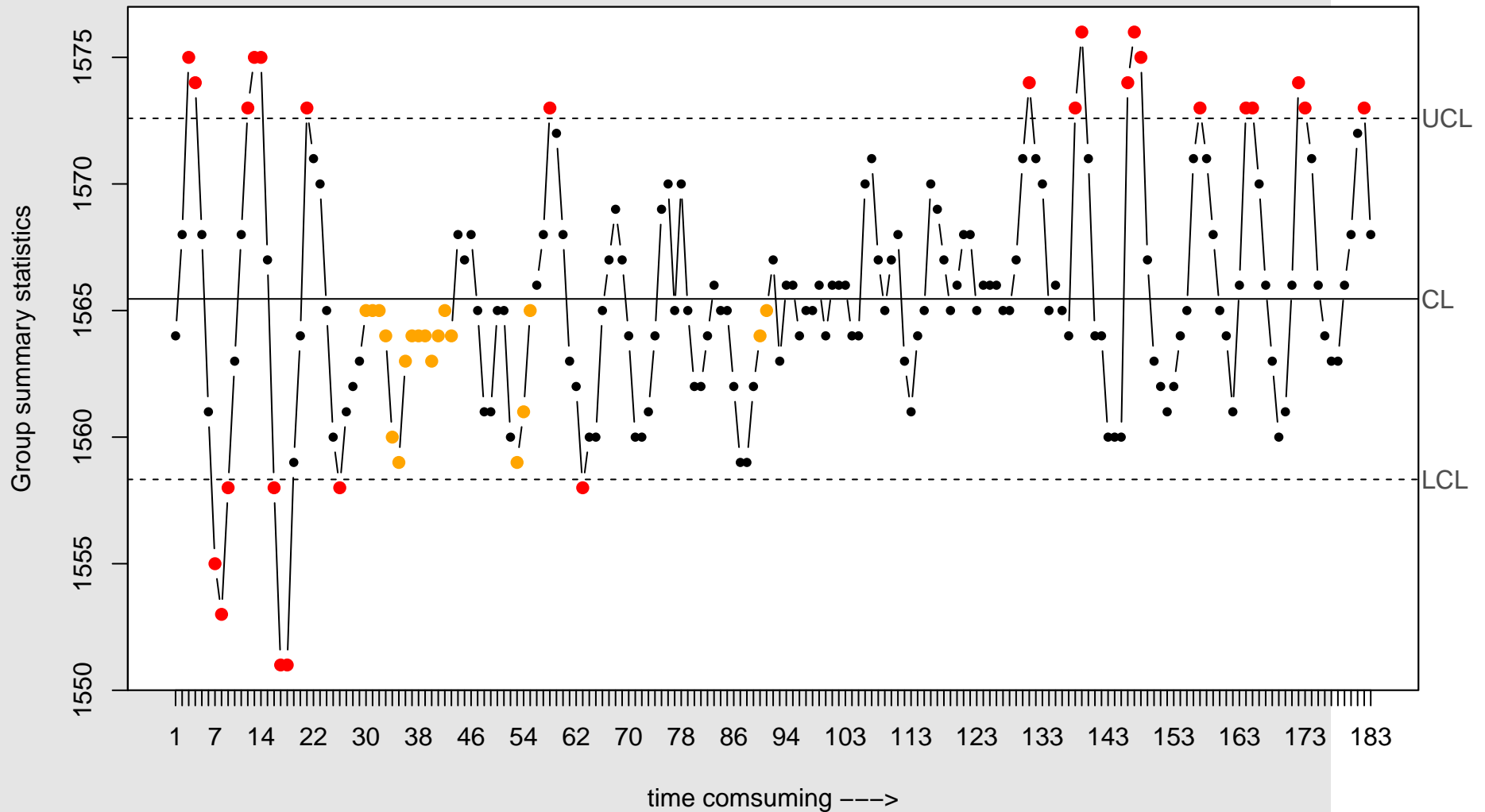
LCL = 1561.955
UCL = 1575.487

Number beyond limits = 26
Number violating runs = 20

294th column point of this product

Group summary statistics

UCL
CL
LCL

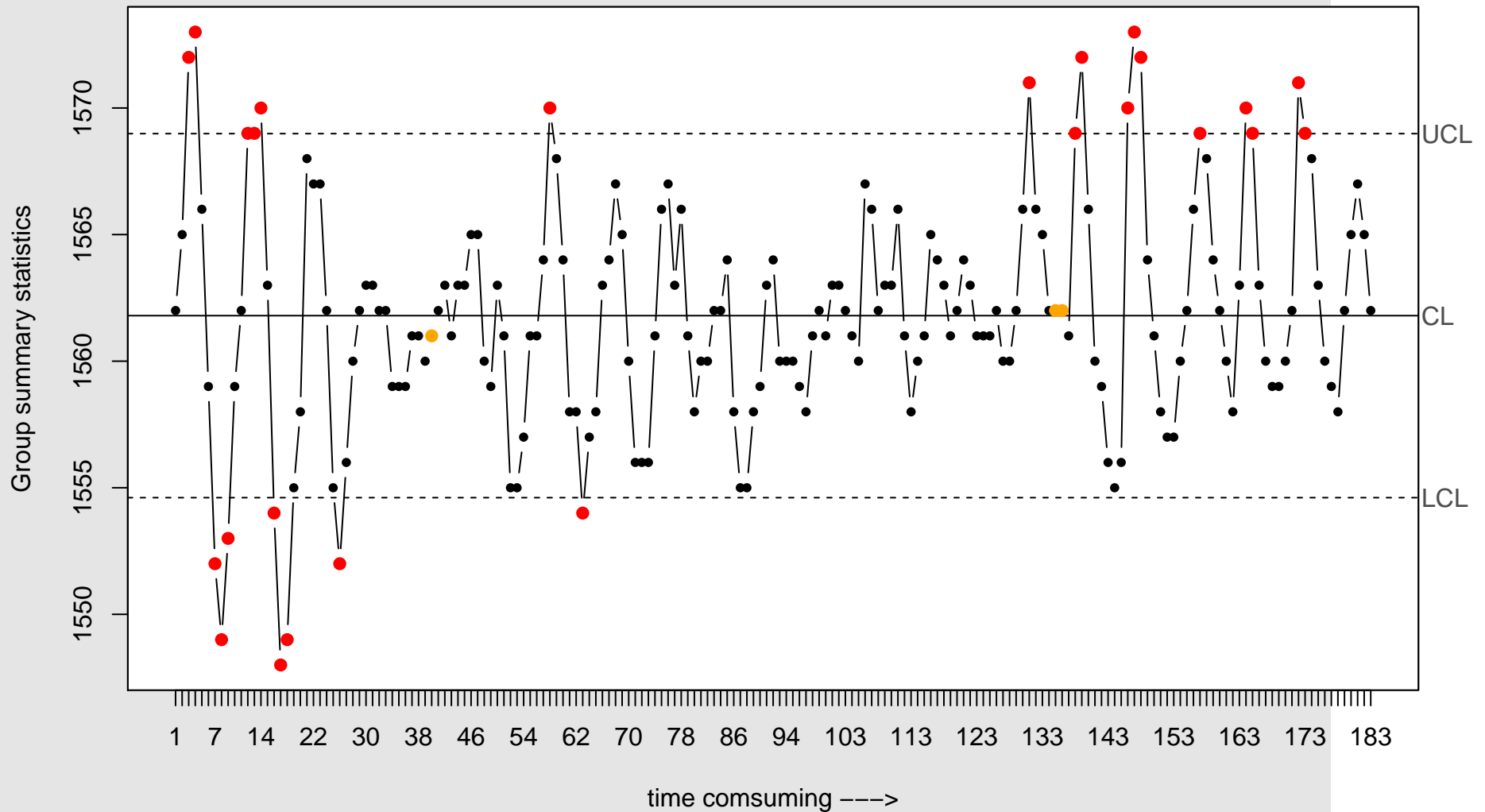time comsuming ––––>

Number of groups = 183
Center = 1565.459
StdDev = 2.377056

LCL = 1558.328
UCL = 1572.59

Number beyond limits = 27
Number violating runs = 19

295th column point of this product

Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1561.798   LCL = 1554.608   Number beyond limits = 25
StdDev = 2.39654   UCL = 1568.987   Number violating runs = 3

296th column point of this product

Group summary statistics

time comsuming --->
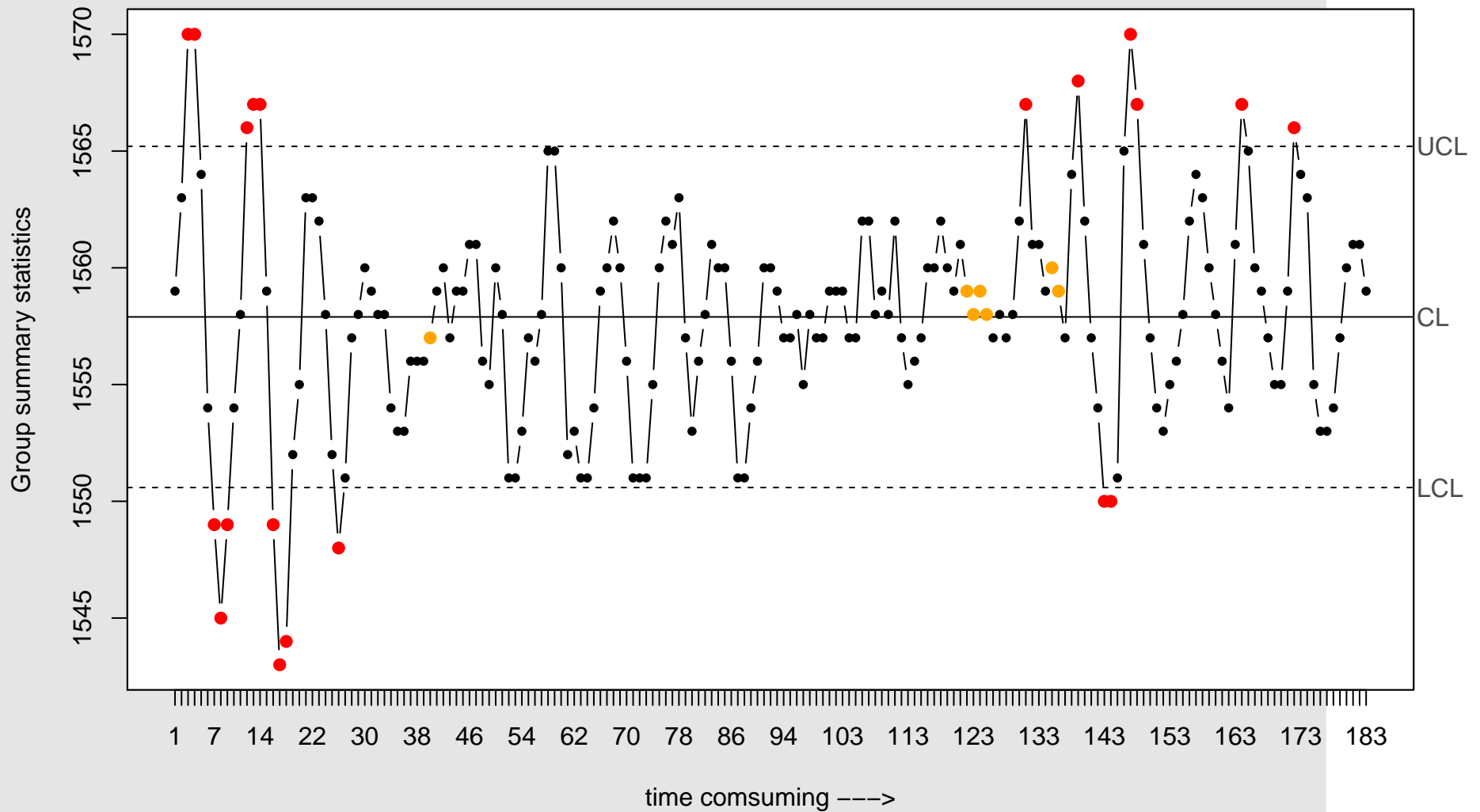
Number of groups = 183
Center = 1557.896   LCL = 1550.59   Number beyond limits = 20
StdDev = 2.435508   UCL = 1565.203   Number violating runs = 7

297th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ––––>
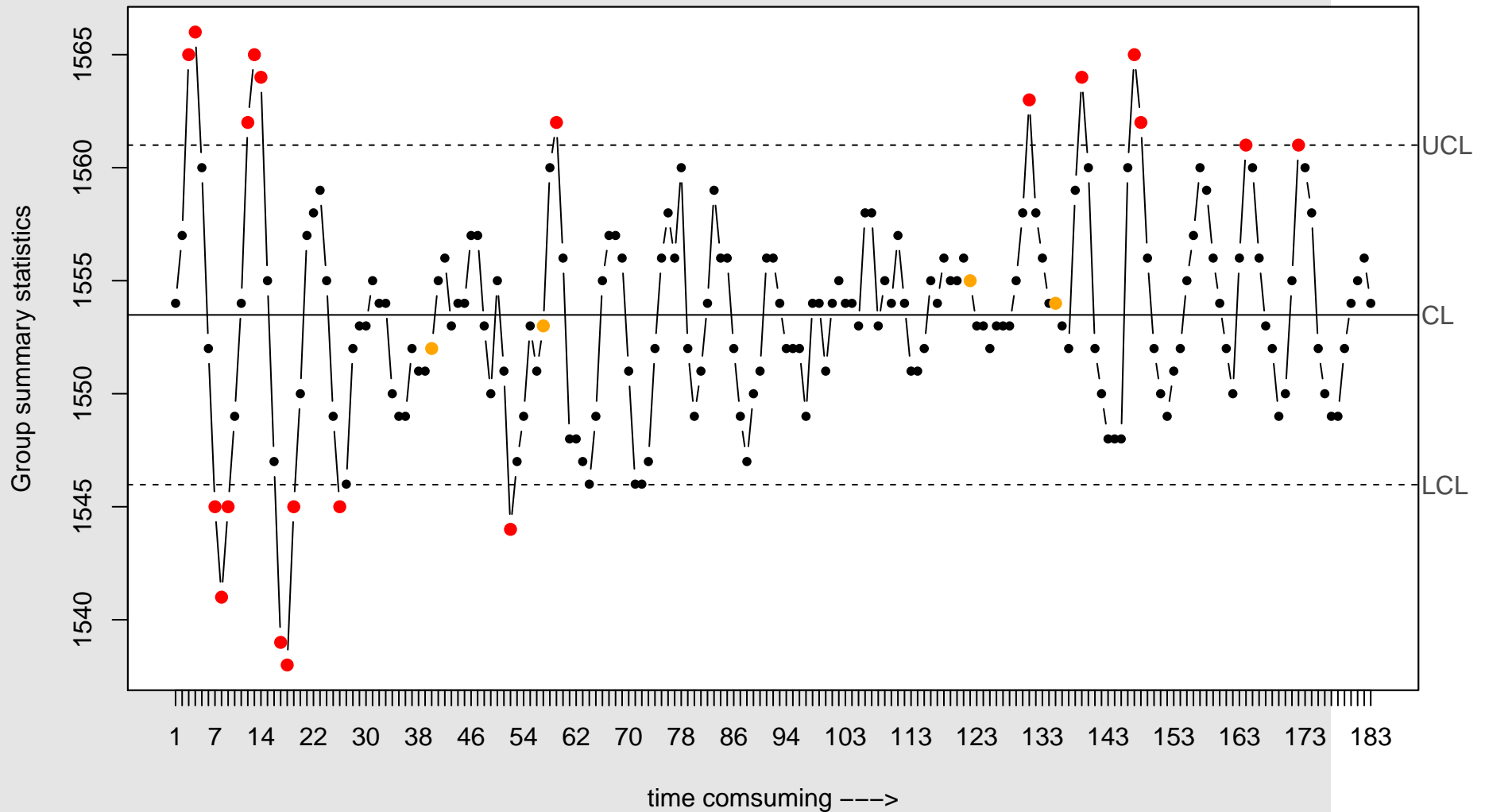
Number of groups = 183
Center = 1553.486   LCL = 1545.975   Number beyond limits = 20
StdDev = 2.503702   UCL = 1560.997   Number violating runs = 4

298th column point of this product

Group summary statistics

time comsuming ––––>
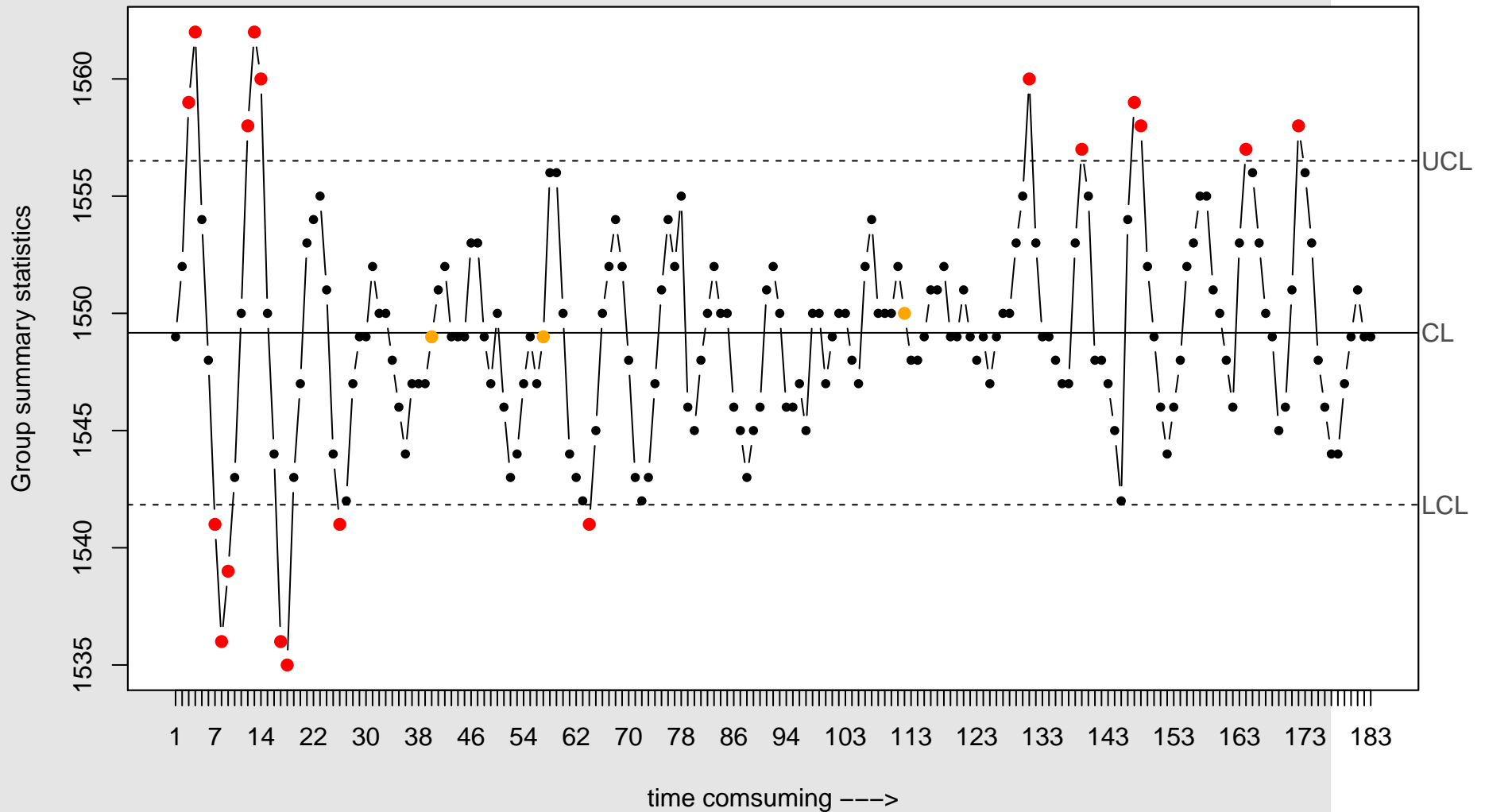
Number of groups = 183
Center = 1549.169
StdDev = 2.44525
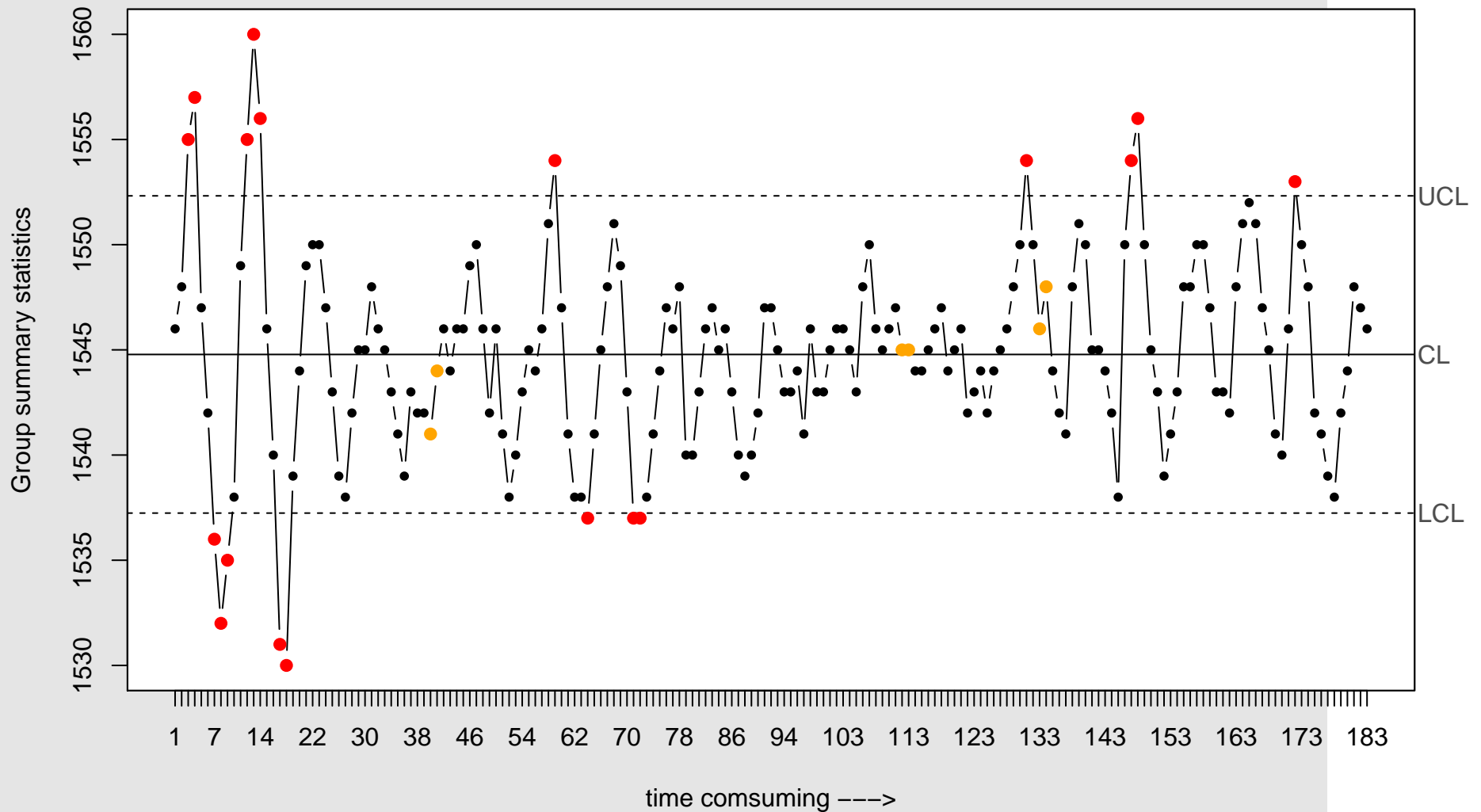
LCL = 1541.834
UCL = 1556.505

Number beyond limits = 18
Number violating runs = 3

299th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1544.781   LCL = 1537.241   Number beyond limits = 18
StdDev = 2.513444   UCL = 1552.322   Number violating runs = 6

300th column point of this product

Group summary statistics

UCL

CL

LCL

time comsuming ----->
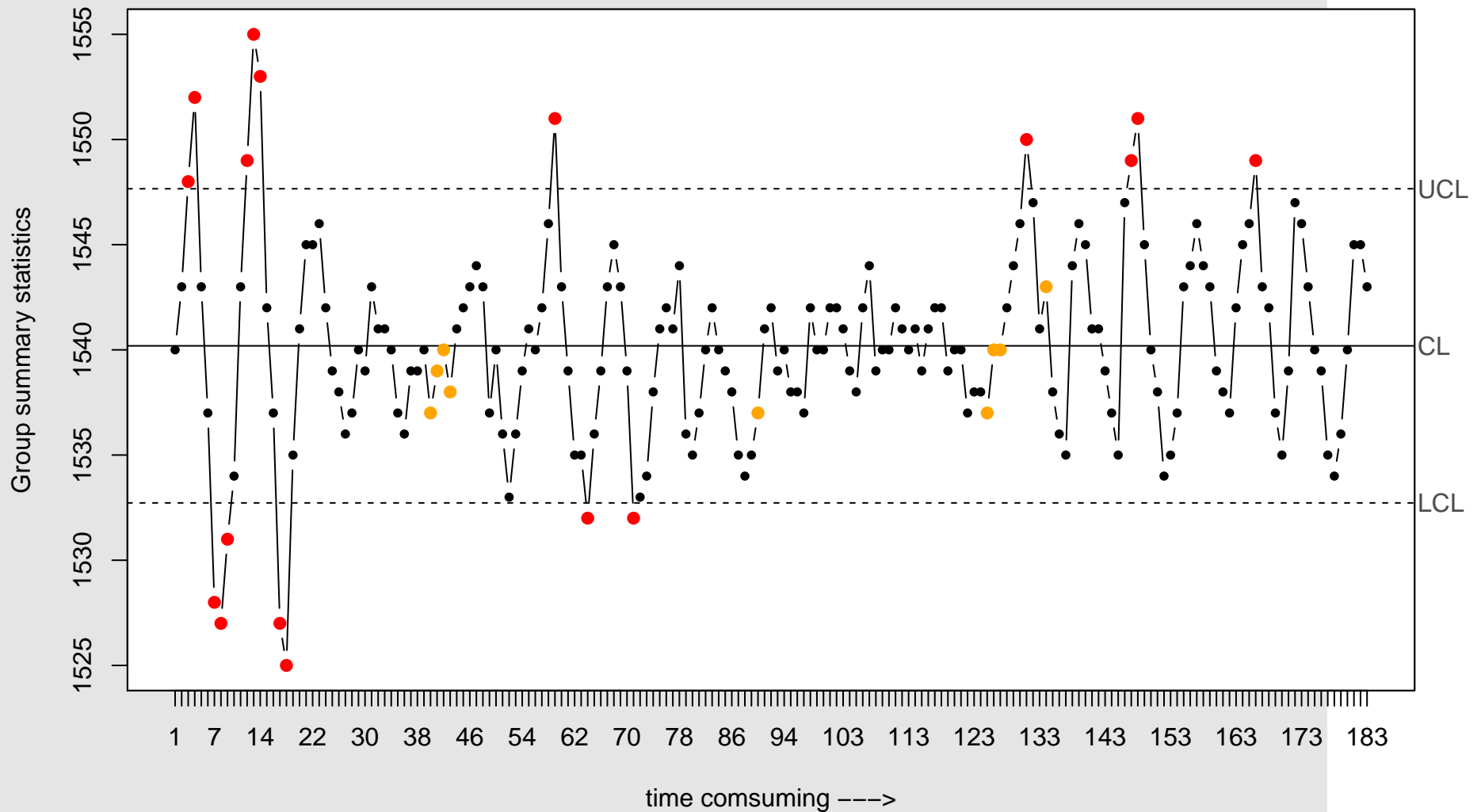
Number of groups = 183
Center = 1540.191
StdDev = 2.489089
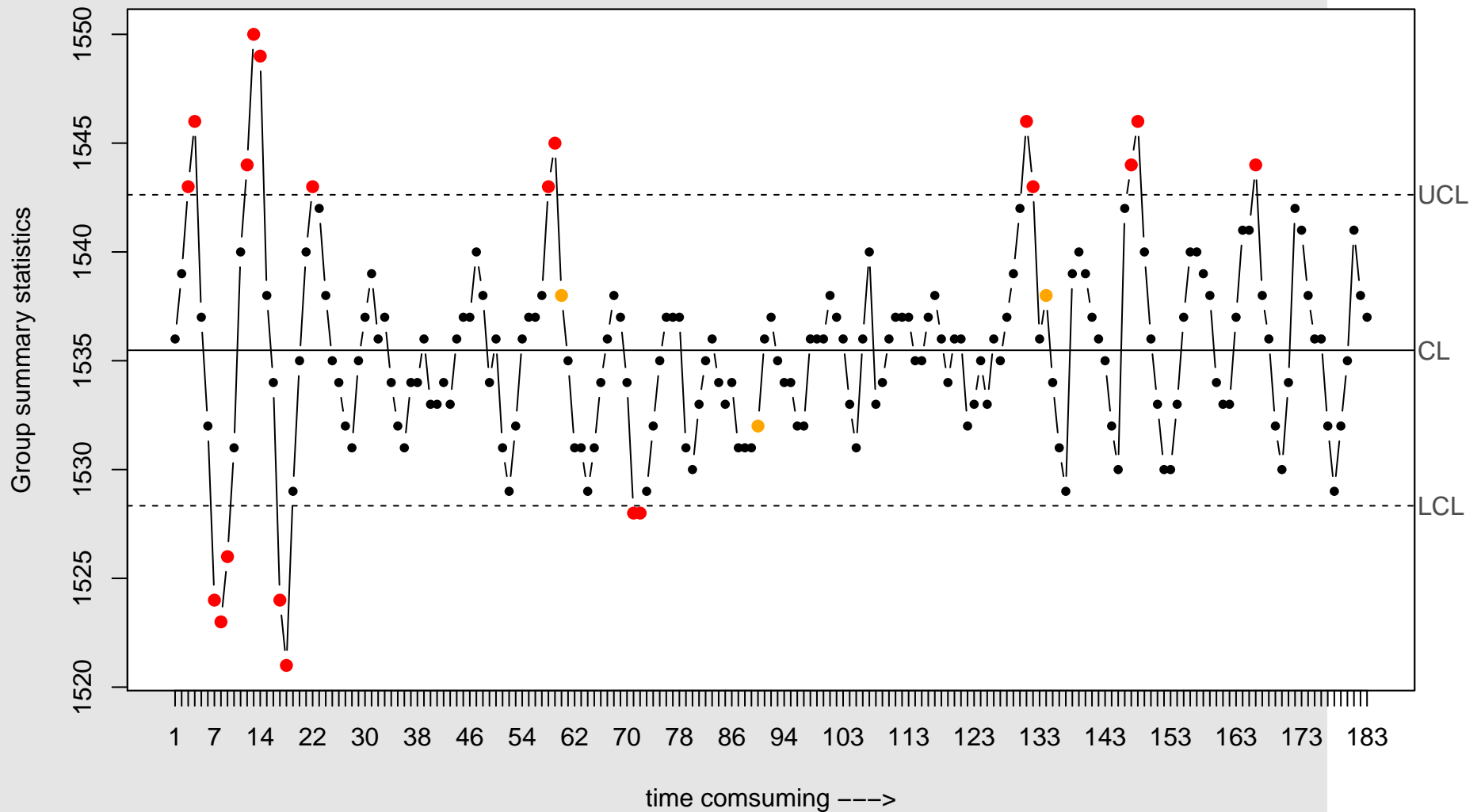
LCL = 1532.724
UCL = 1547.659

Number beyond limits = 17
Number violating runs = 9

301th column point of this product
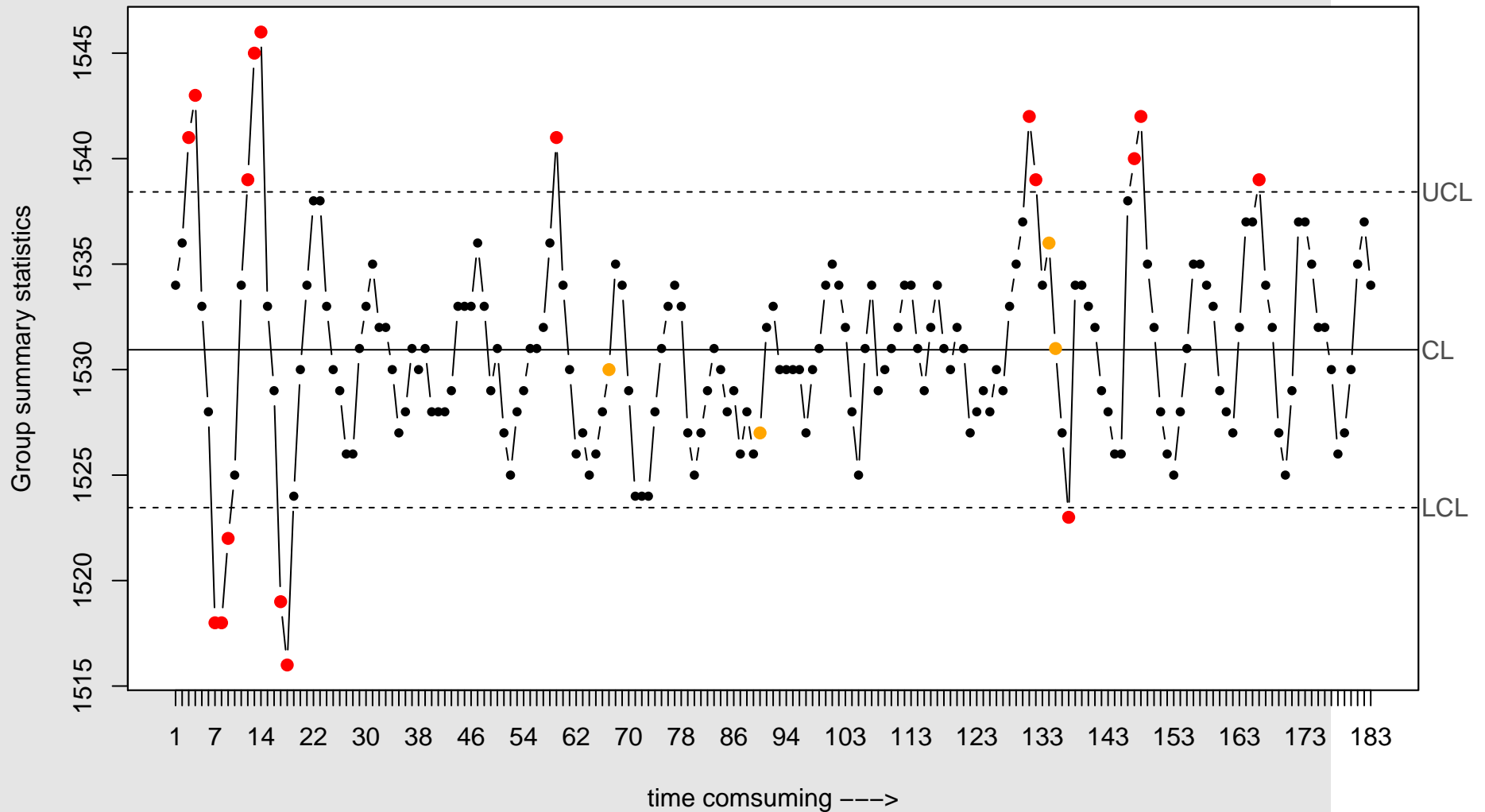
Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1535.481
StdDev = 2.381927

LCL = 1528.335
UCL = 1542.627

Number beyond limits = 20
Number violating runs = 3

302th column point of this product

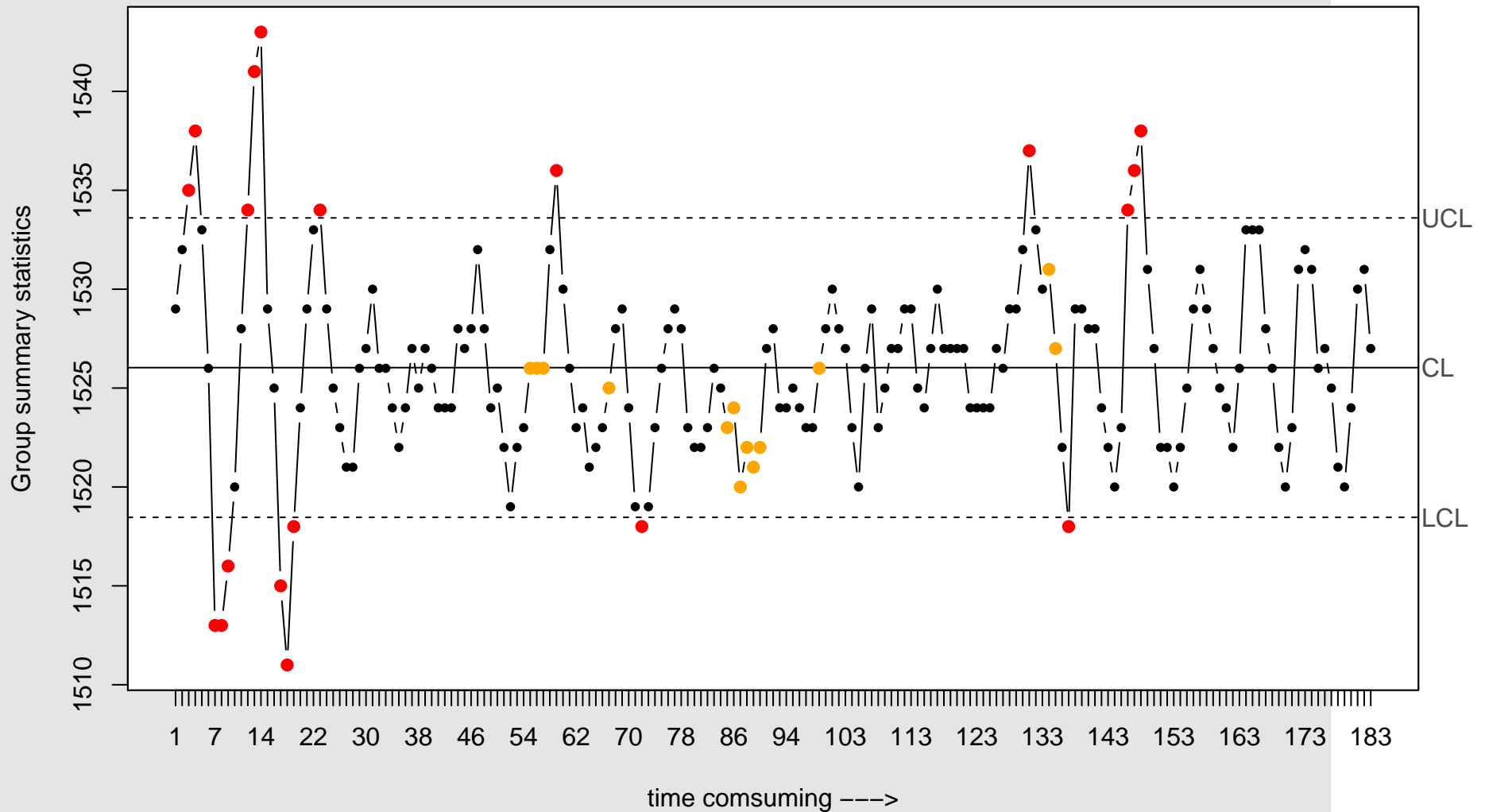Number of groups = 183
Center = 1530.94   LCL = 1523.458   Number beyond limits = 17
StdDev = 2.49396   UCL = 1538.422   Number violating runs = 4

303th column point of this product

Group summary statistics

UCL

CL

LCL

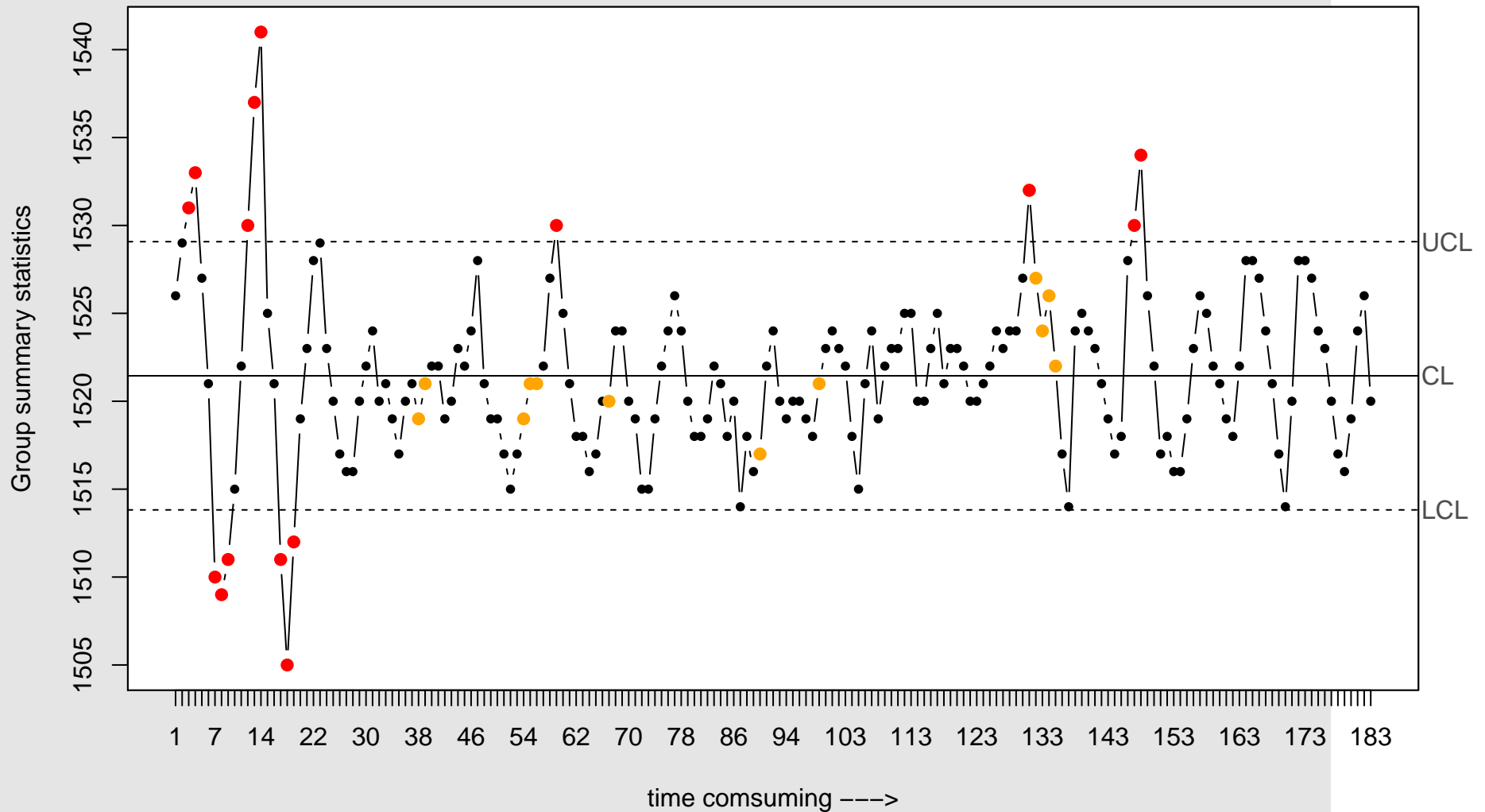time comsuming --->

Number of groups = 183
Center = 1526.033
StdDev = 2.523186

LCL = 1518.463
UCL = 1533.602

Number beyond limits = 19
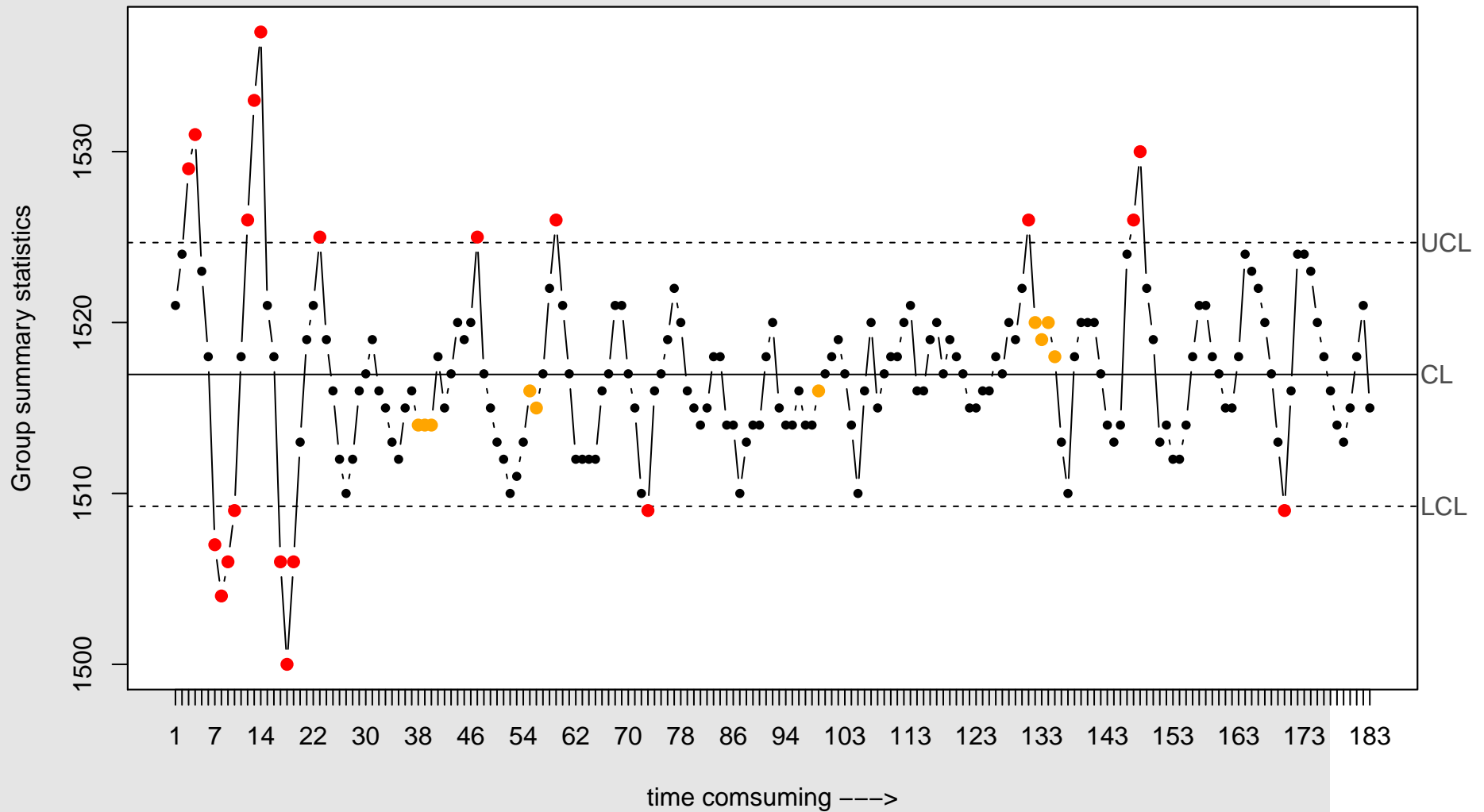Number violating runs = 13

304th column point of this product

Group summary statistics

1540 — 1535 — 1530 — 1525 — 1520 — 1515 — 1510 — 1505

UCL
CL
LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ——->

Number of groups = 183
Center = 1521.448   LCL = 1513.82   Number beyond limits = 15
StdDev = 2.54267   UCL = 1529.076   Number violating runs = 13

305th column point of this product

Group summary statistics

time comsuming --->

Number of groups = 183
Center = 1516.962
StdDev = 2.571896

LCL = 1509.246
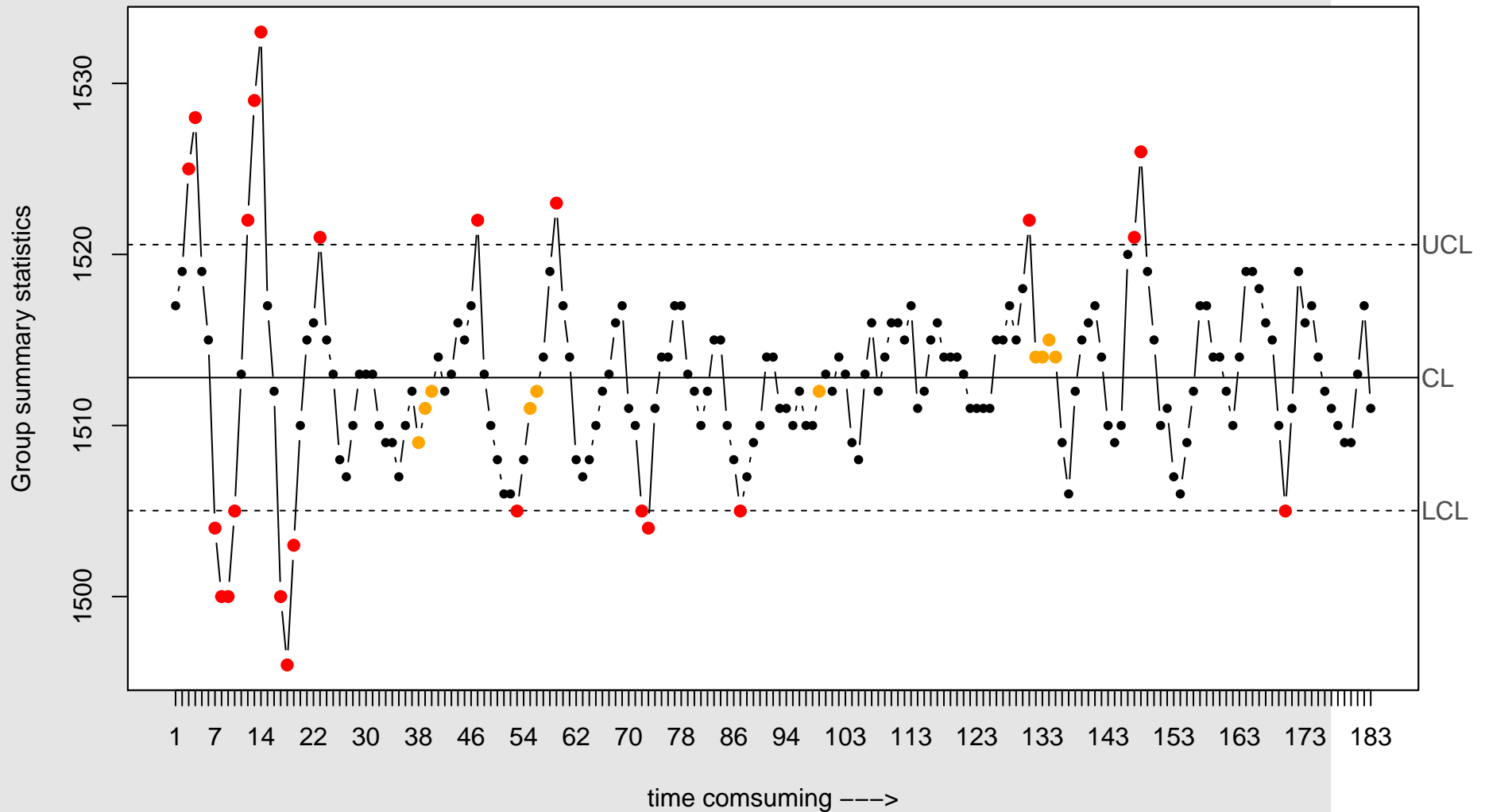UCL = 1524.677

Number beyond limits = 20
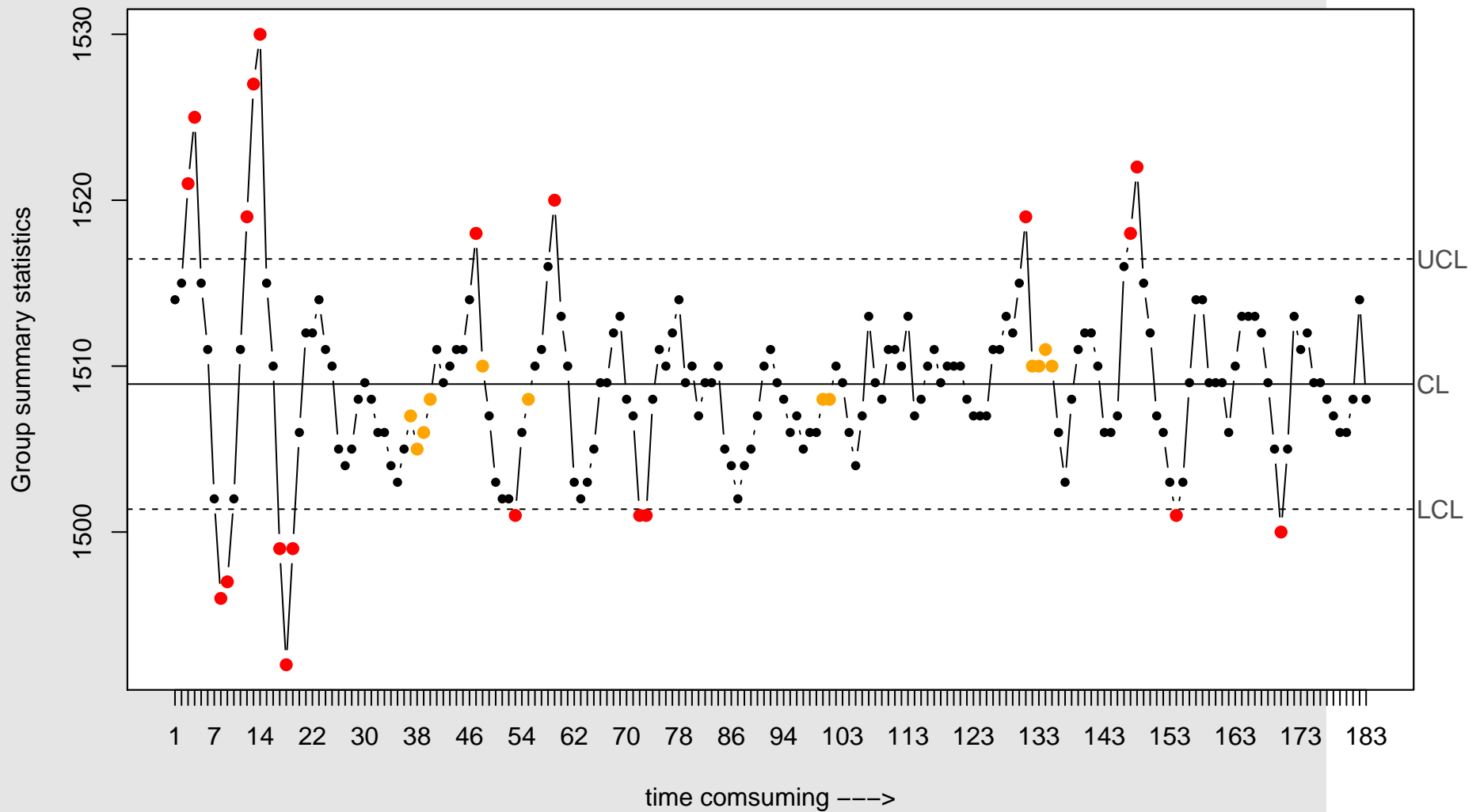Number violating runs = 10

306th column point of this product

Number of groups = 183
Center = 1512.798   LCL = 1505.024   Number beyond limits = 23
StdDev = 2.59138   UCL = 1520.572   Number violating runs = 10

307th column point of this product

Number of groups = 183
Center = 1508.918   LCL = 1501.378   Number beyond limits = 20
StdDev = 2.513444   UCL = 1516.458   Number violating runs = 13

308th column point of this product

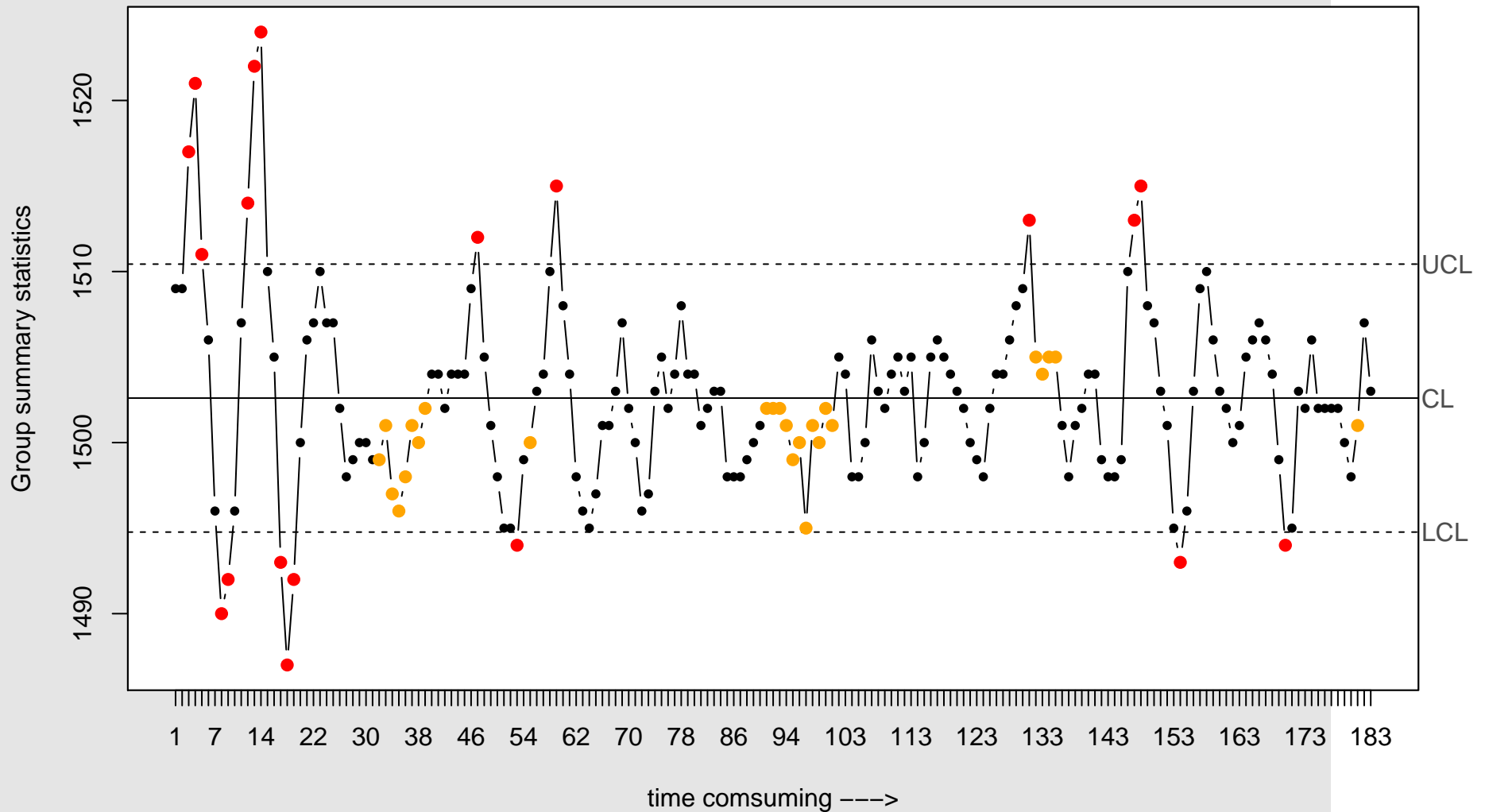Group summary statistics

UCL
CL
LCL

time comsuming ––––>
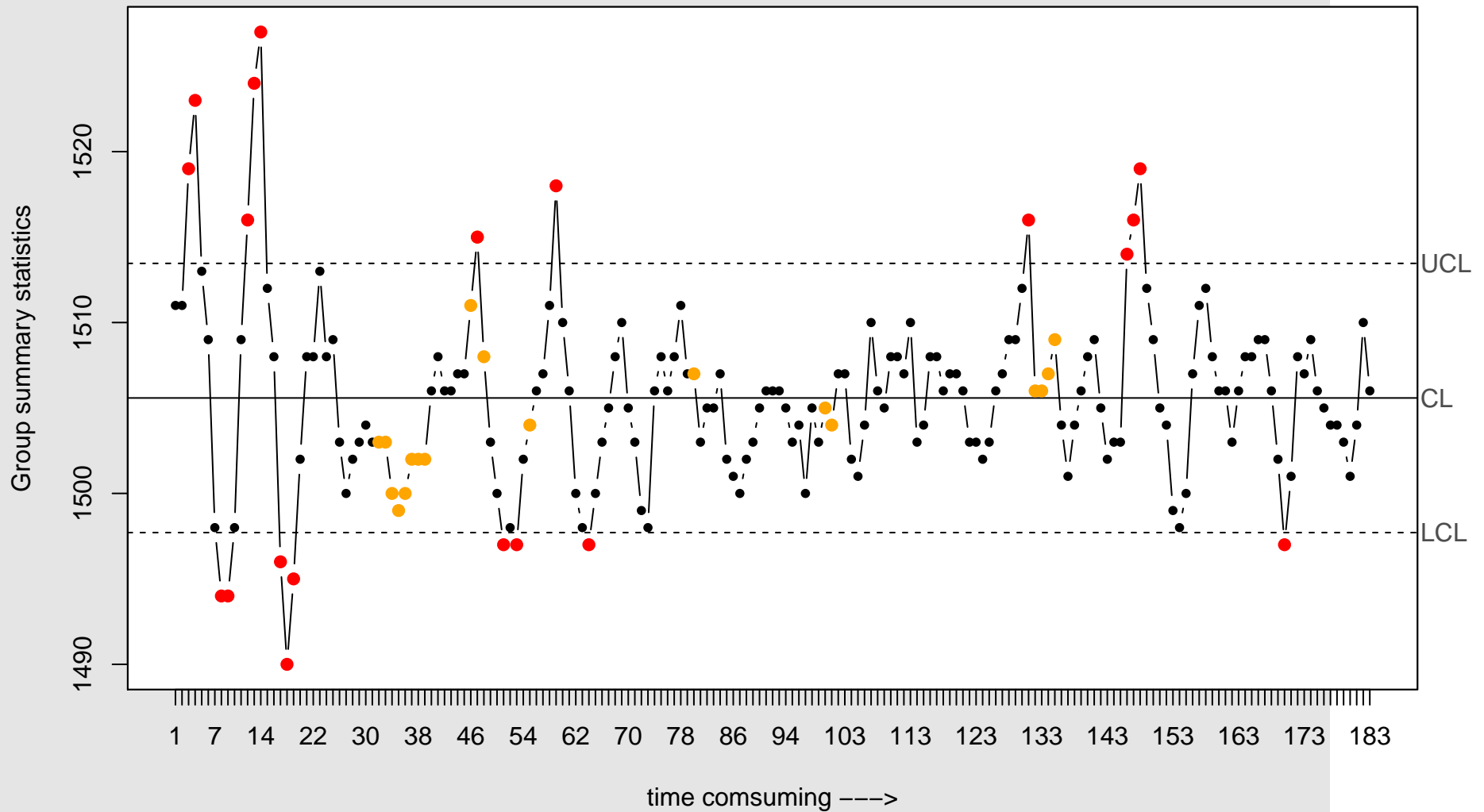
Number of groups = 183
Center = 1505.585
StdDev = 2.625477

LCL = 1497.708
UCL = 1513.461

Number beyond limits = 20
Number violating runs = 19

309th column point of this product

Group summary statistics

UCL
CL
LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ––––>

Number of groups = 183
Center = 1502.601   LCL = 1494.768   Number beyond limits = 19
StdDev = 2.610864   UCL = 1510.434   Number violating runs = 25

310th column point of this product

Group summary statistics

time comsuming ---->
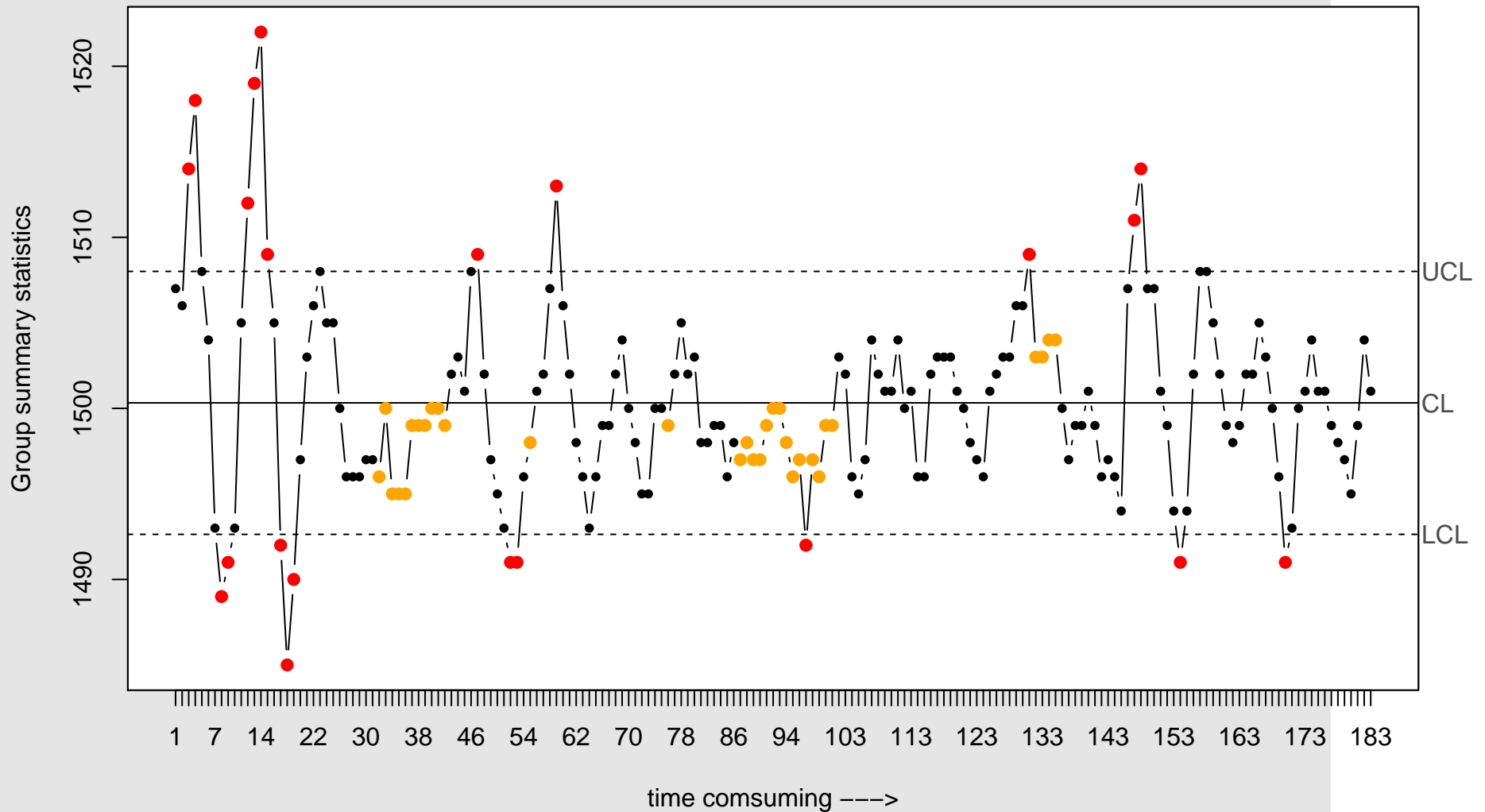
Number of groups = 183
Center = 1500.322   LCL = 1492.636   Number beyond limits = 21
StdDev = 2.562154   UCL = 1508.009   Number violating runs = 33

311th column point of this product

Group summary statistics

time comsuming ––––>
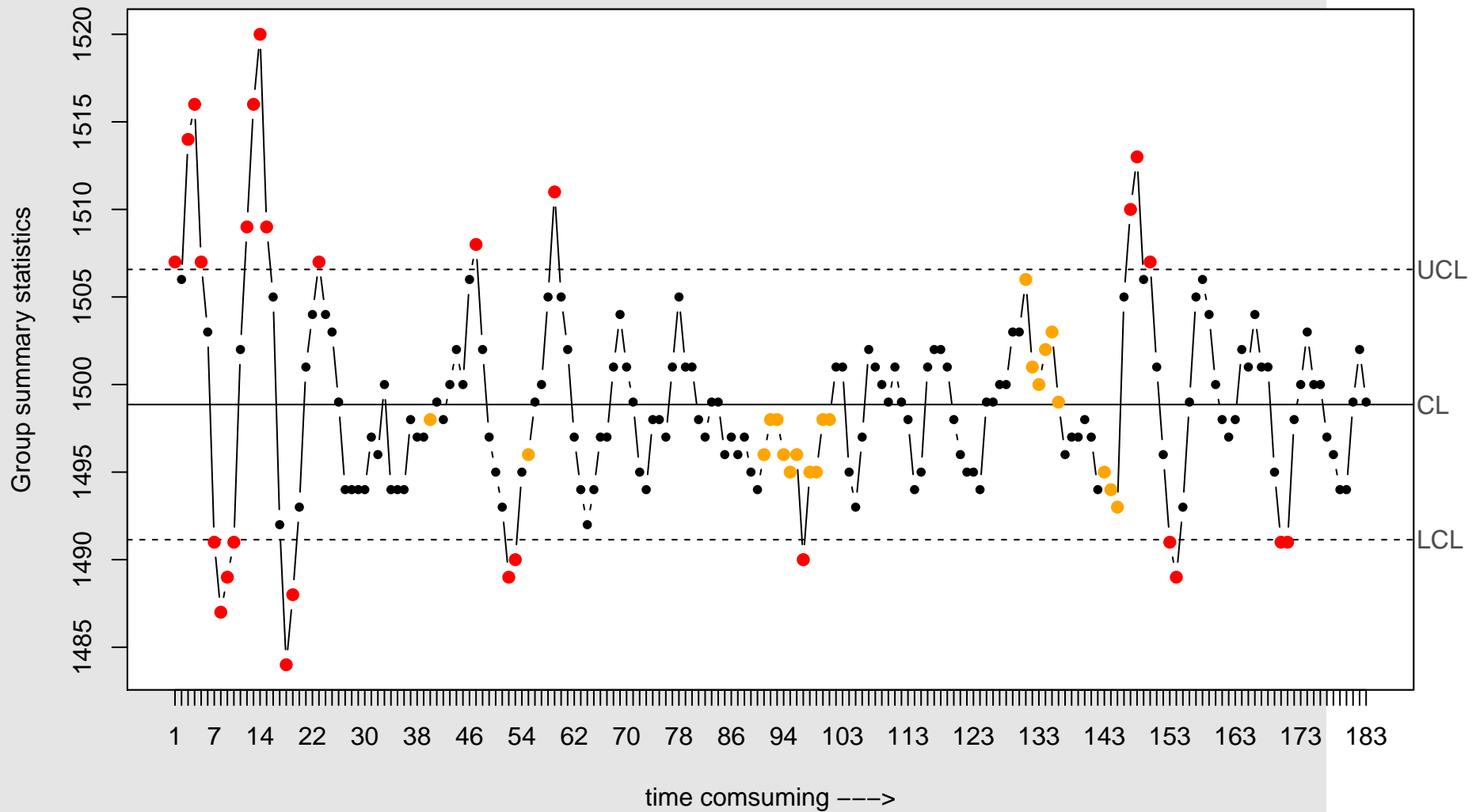
Number of groups = 183
Center = 1498.858
StdDev = 2.571896
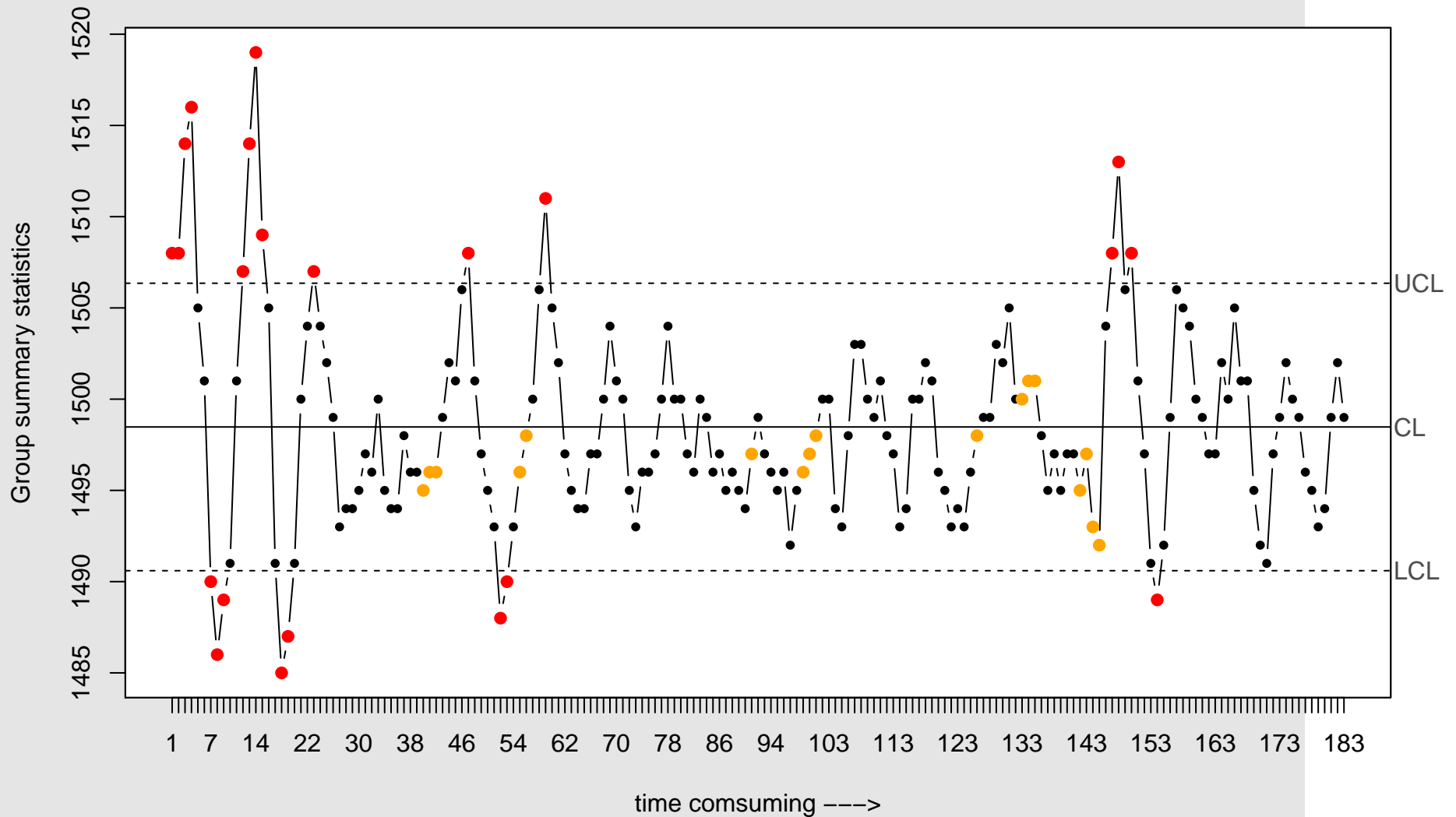
LCL = 1491.142
UCL = 1506.574

Number beyond limits = 27
Number violating runs = 22

312th column point of this product


Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1498.475   LCL = 1490.599   Number beyond limits = 22
StdDev = 2.625477   UCL = 1506.352   Number violating runs = 17

313th column point of this product

Group summary statistics

UCL
CL
LCL

time comsuming ––––>
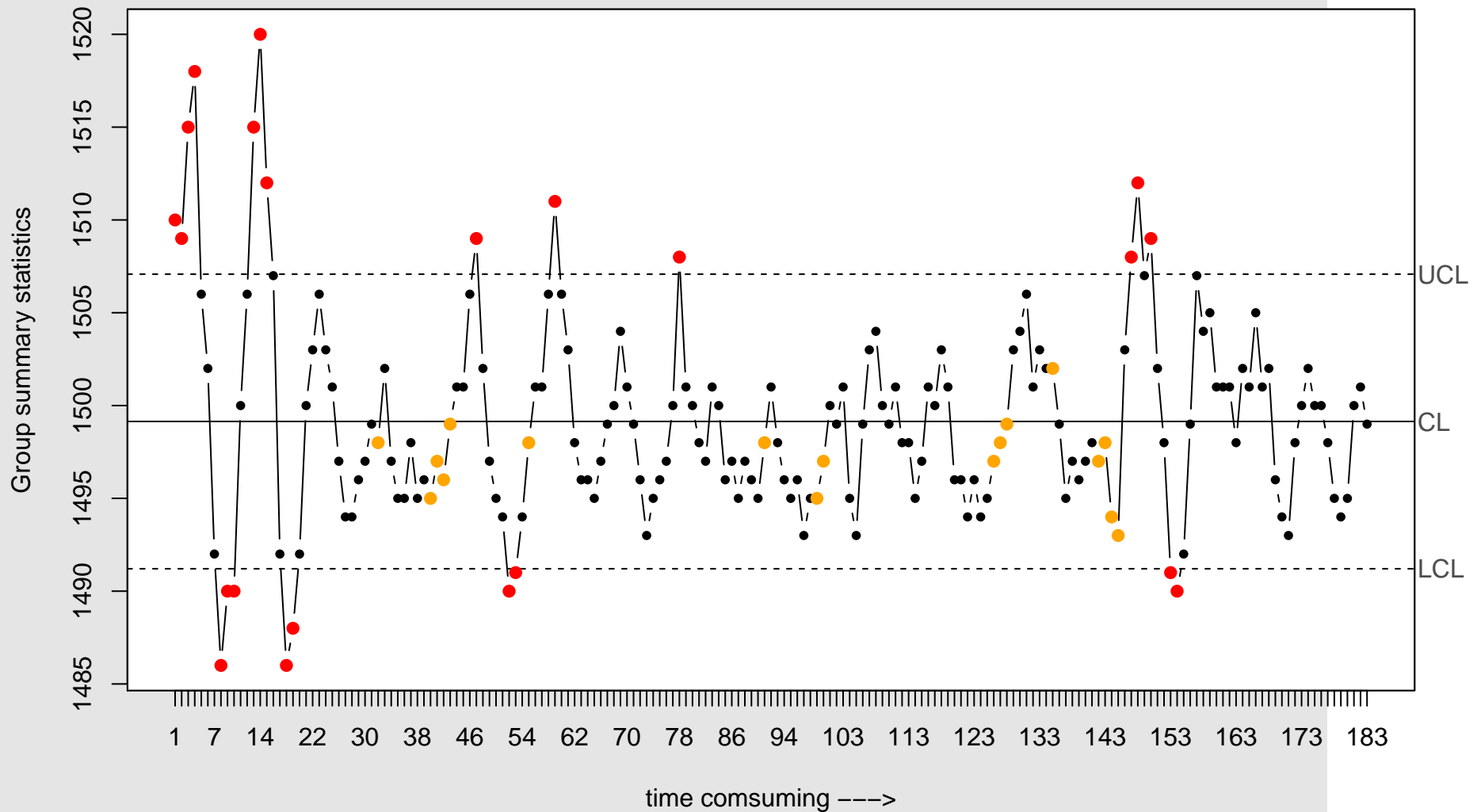
Number of groups = 183
Center = 1499.142   LCL = 1491.207   Number beyond limits = 22
StdDev = 2.644961   UCL = 1507.077   Number violating runs = 17

314th column point of this product

Group summary statistics

time comsuming ---->
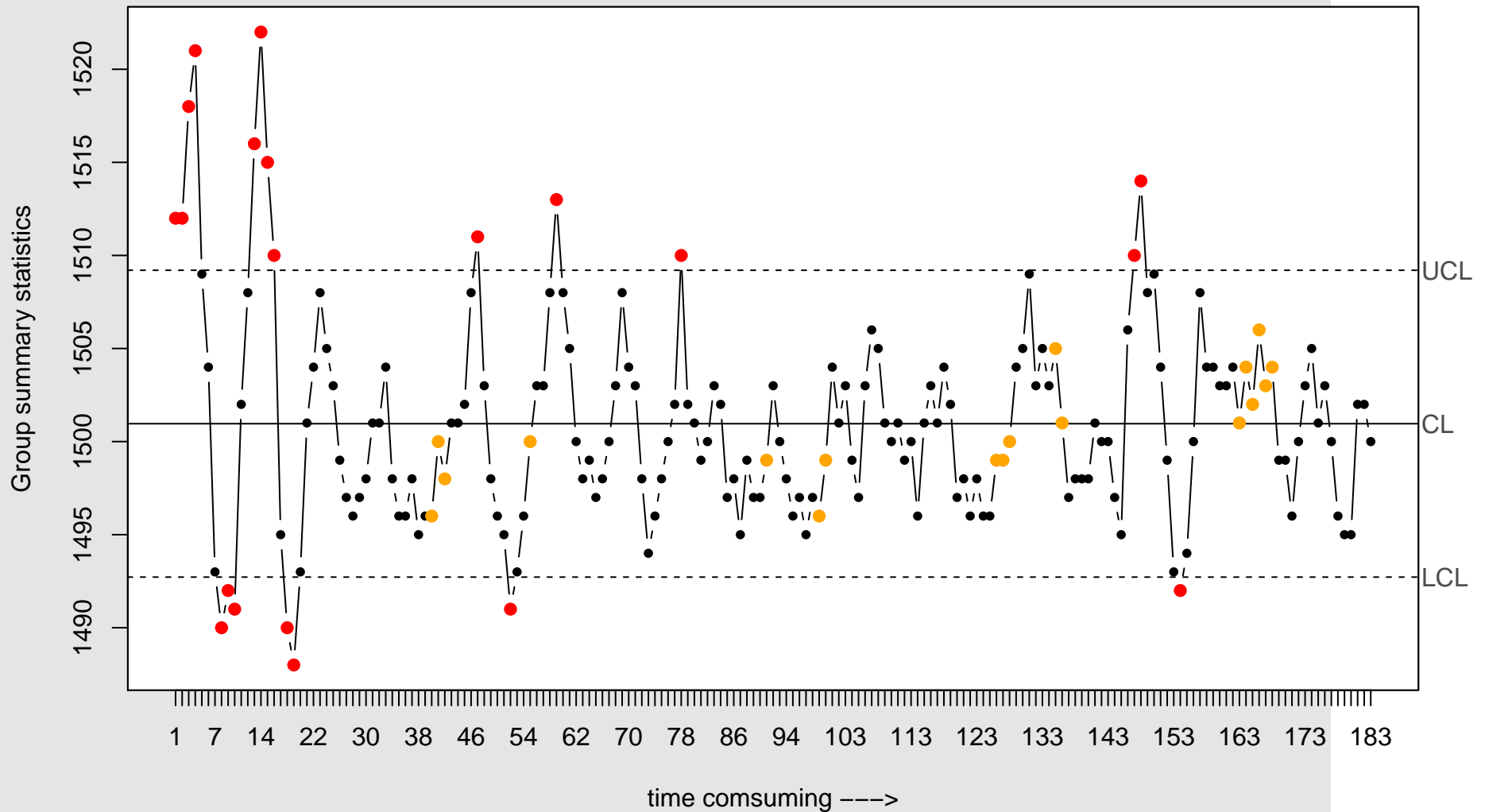
Number of groups = 183
Center = 1500.962   LCL = 1492.72   Number beyond limits = 20
StdDev = 2.747253   UCL = 1509.204   Number violating runs = 18

315th column point of this product
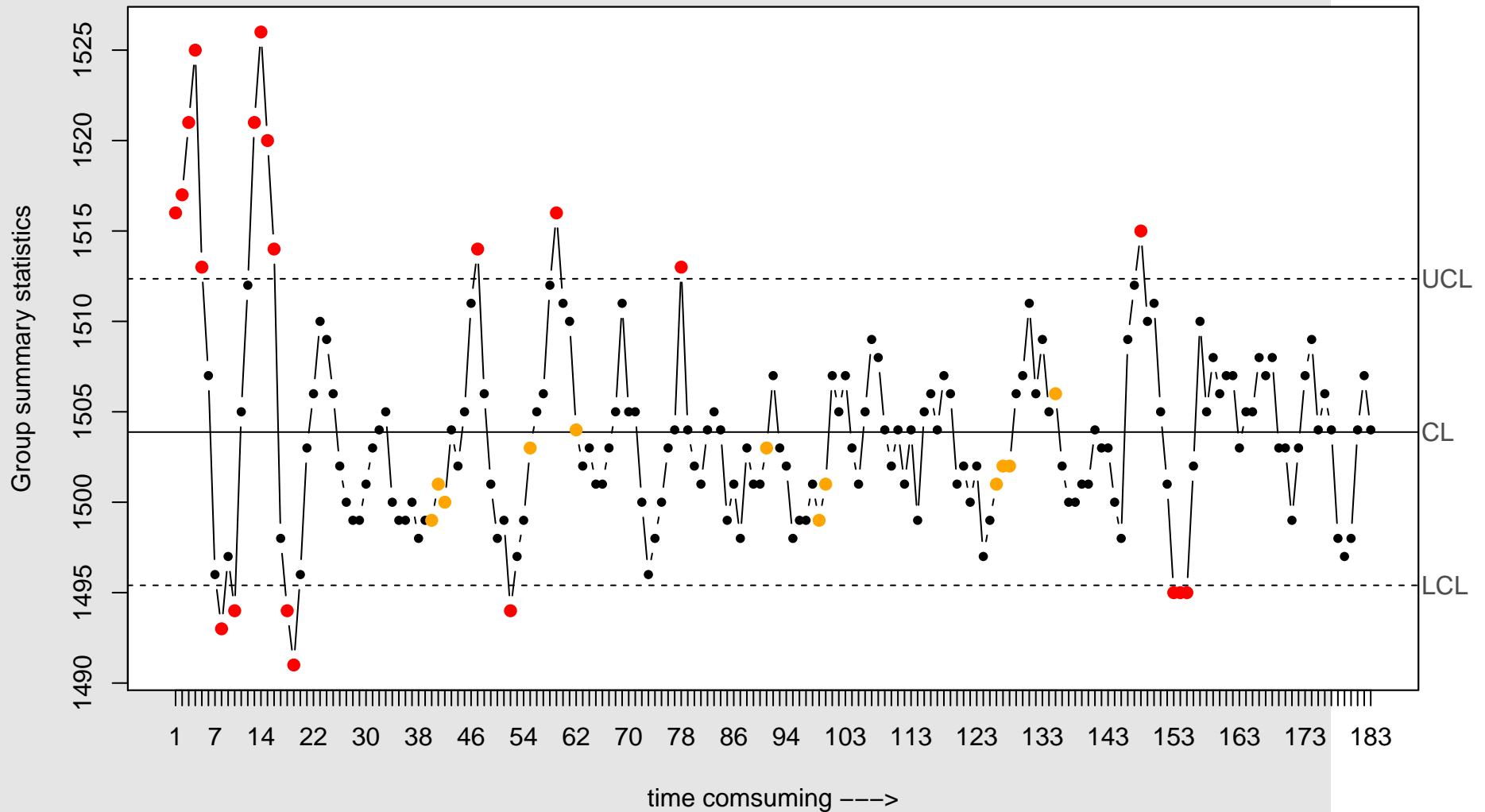
Number of groups = 183
Center = 1503.88   LCL = 1495.404   Number beyond limits = 21
StdDev = 2.825189   UCL = 1512.355   Number violating runs = 12

316th column point of this product

Group summary statistics

time comsuming ––––>
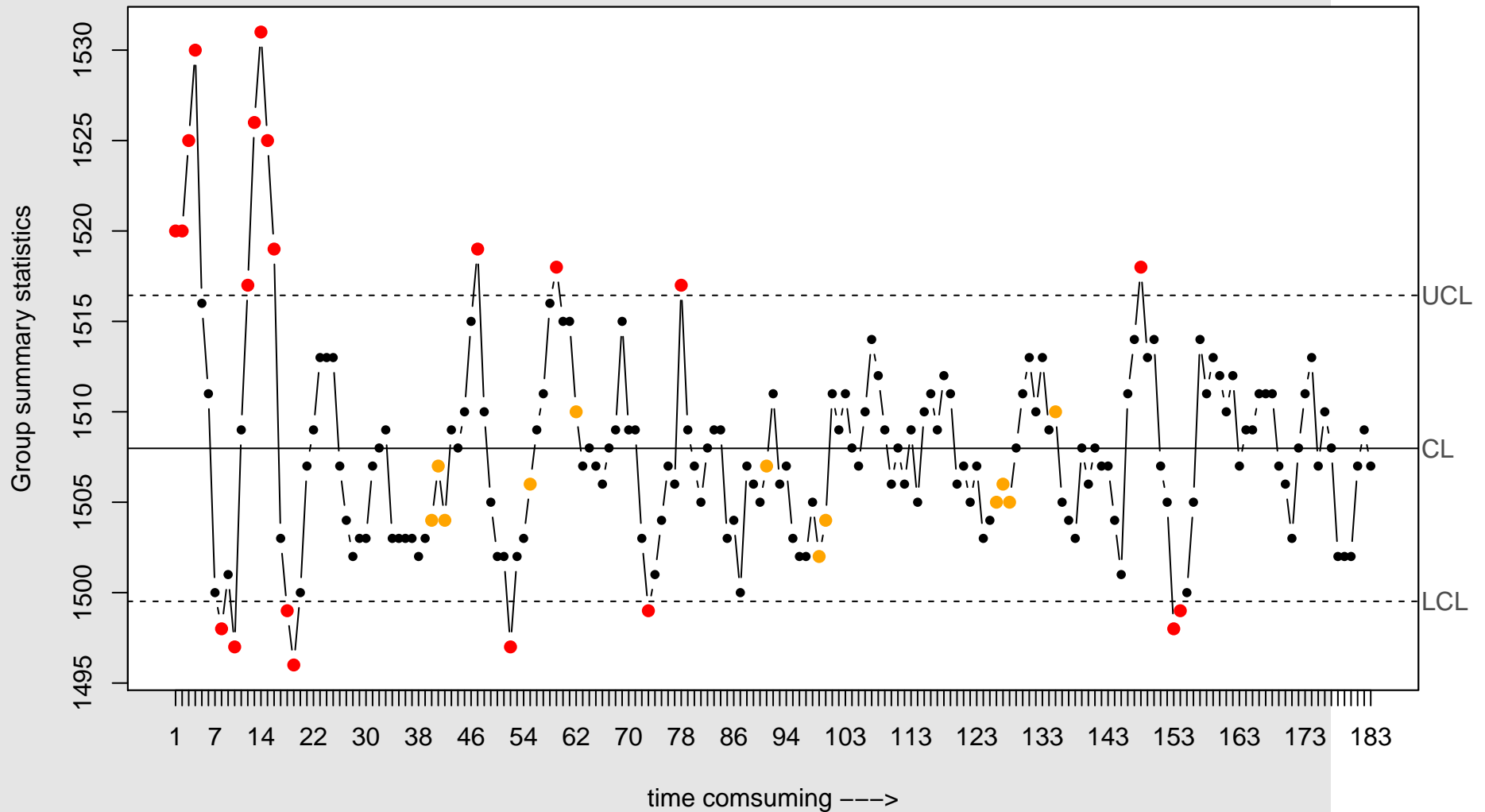
Number of groups = 183
Center = 1507.978   LCL = 1499.517   Number beyond limits = 21
StdDev = 2.820318   UCL = 1516.439   Number violating runs = 12

317th column point of this product

Group summary statistics

time comsuming ---->
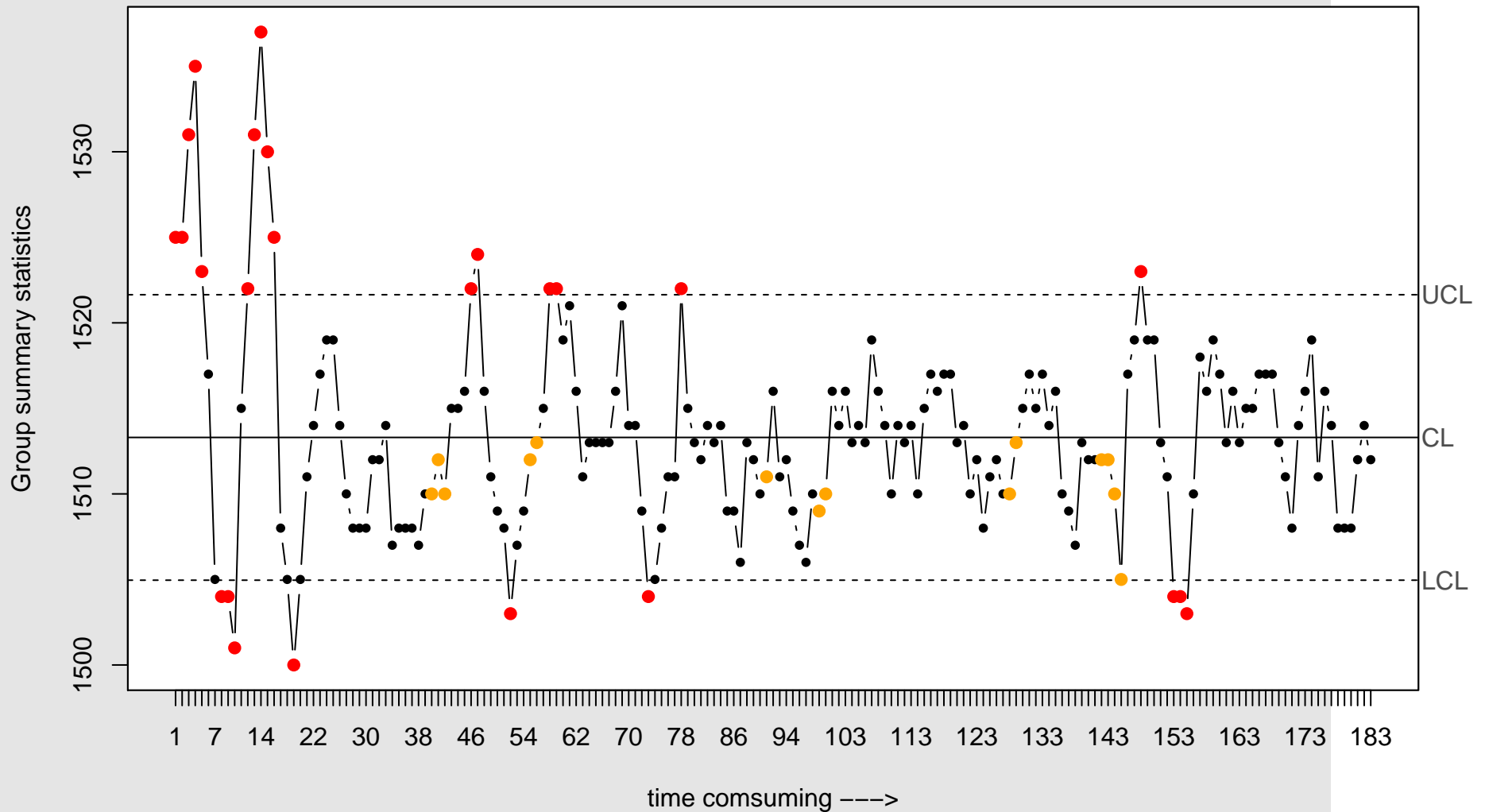
Number of groups = 183
Center = 1513.301
StdDev = 2.78135
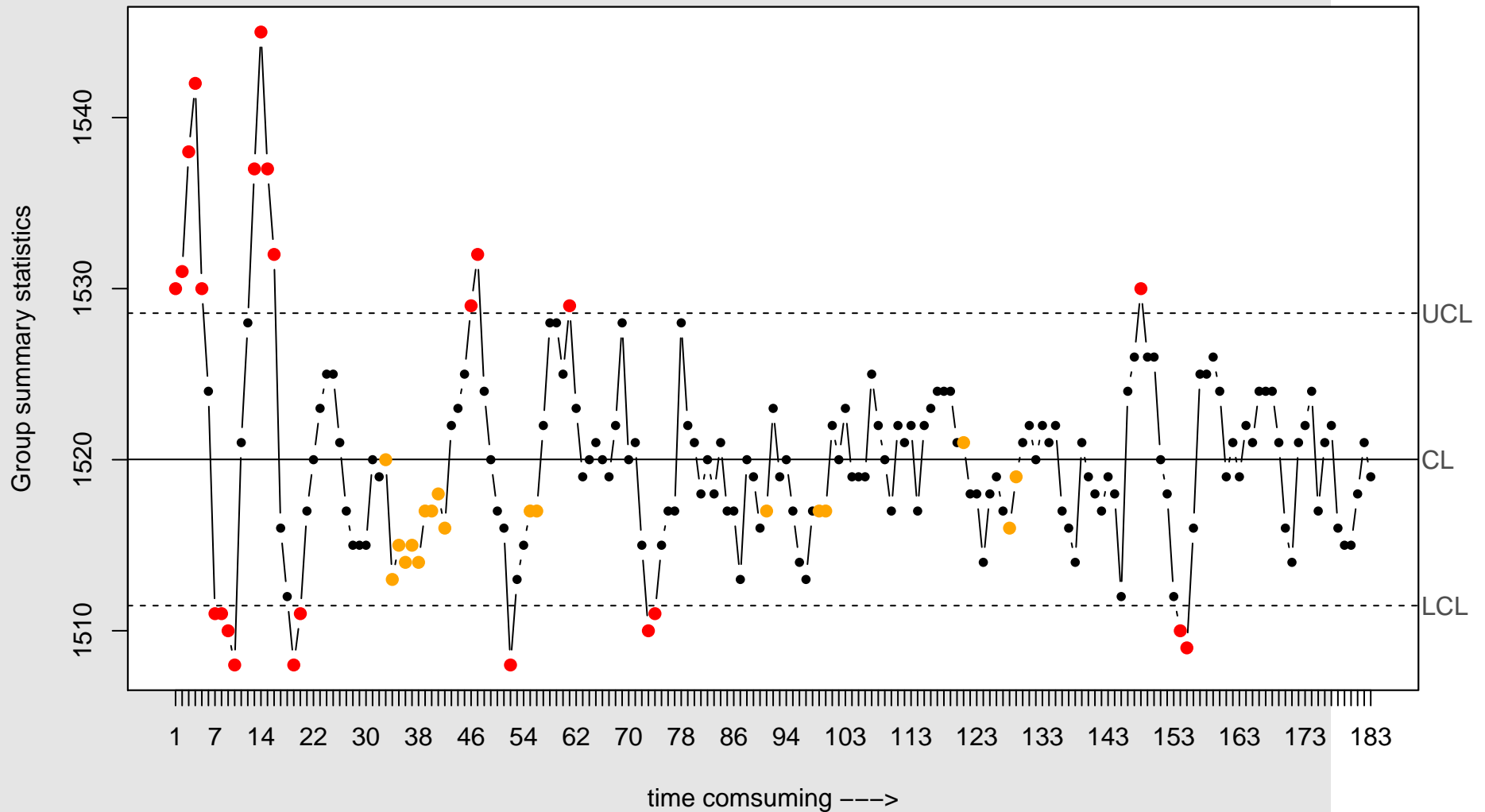
LCL = 1504.956
UCL = 1521.645

Number beyond limits = 25
Number violating runs = 14

318th column point of this product
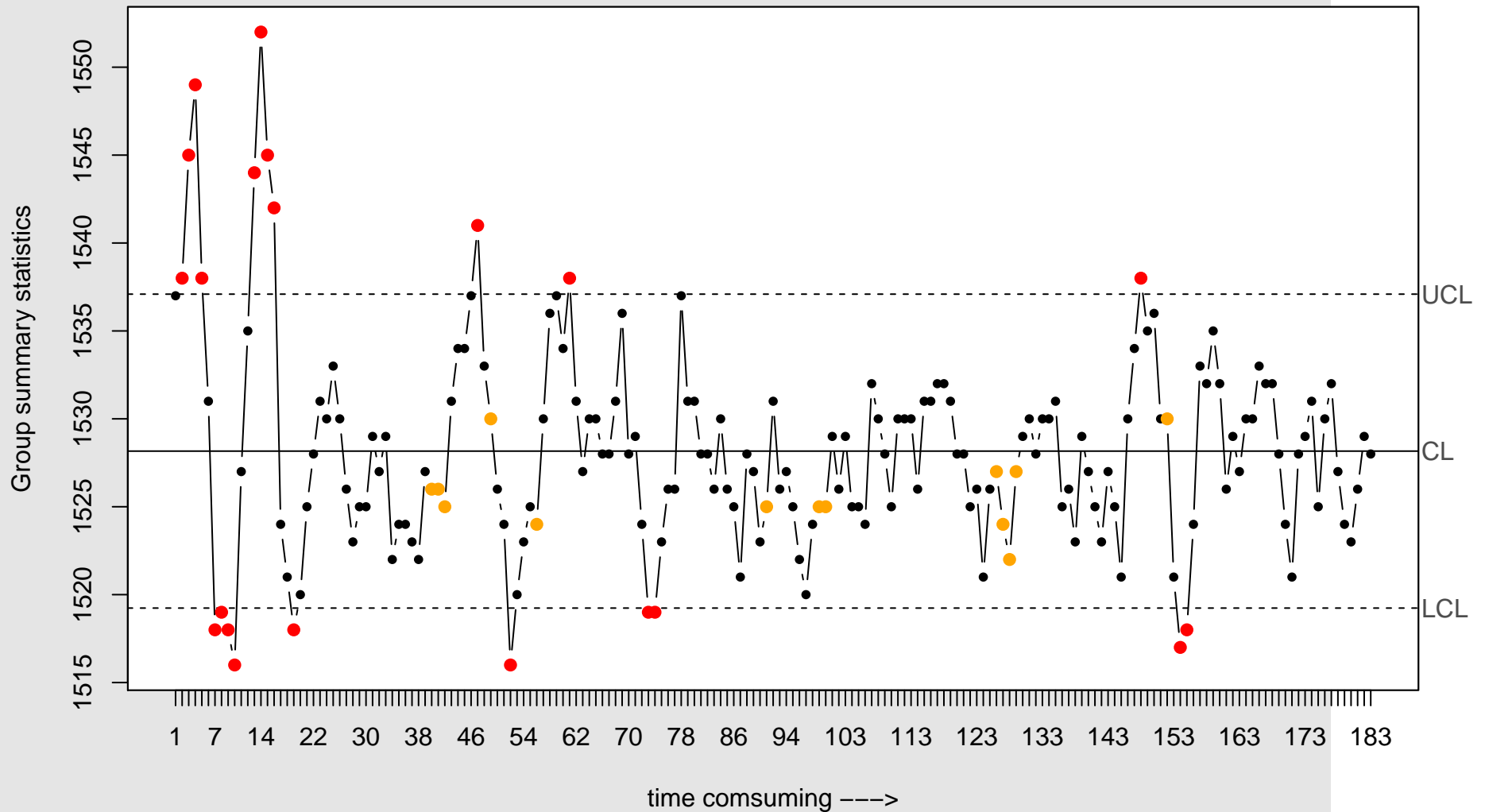
Group summary statistics

time comsuming ---->

Number of groups = 183
Center = 1520.016   LCL = 1511.468   Number beyond limits = 24
StdDev = 2.849544   UCL = 1528.565   Number violating runs = 18

319th column point of this product

Group summary statistics

UCL

CL

LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming ——->

Number of groups = 183
Center = 1528.164   LCL = 1519.235   Number beyond limits = 21
StdDev = 2.97619   UCL = 1537.093   Number violating runs = 13

320th column point of this product

Group summary statistics

time comsuming ---->
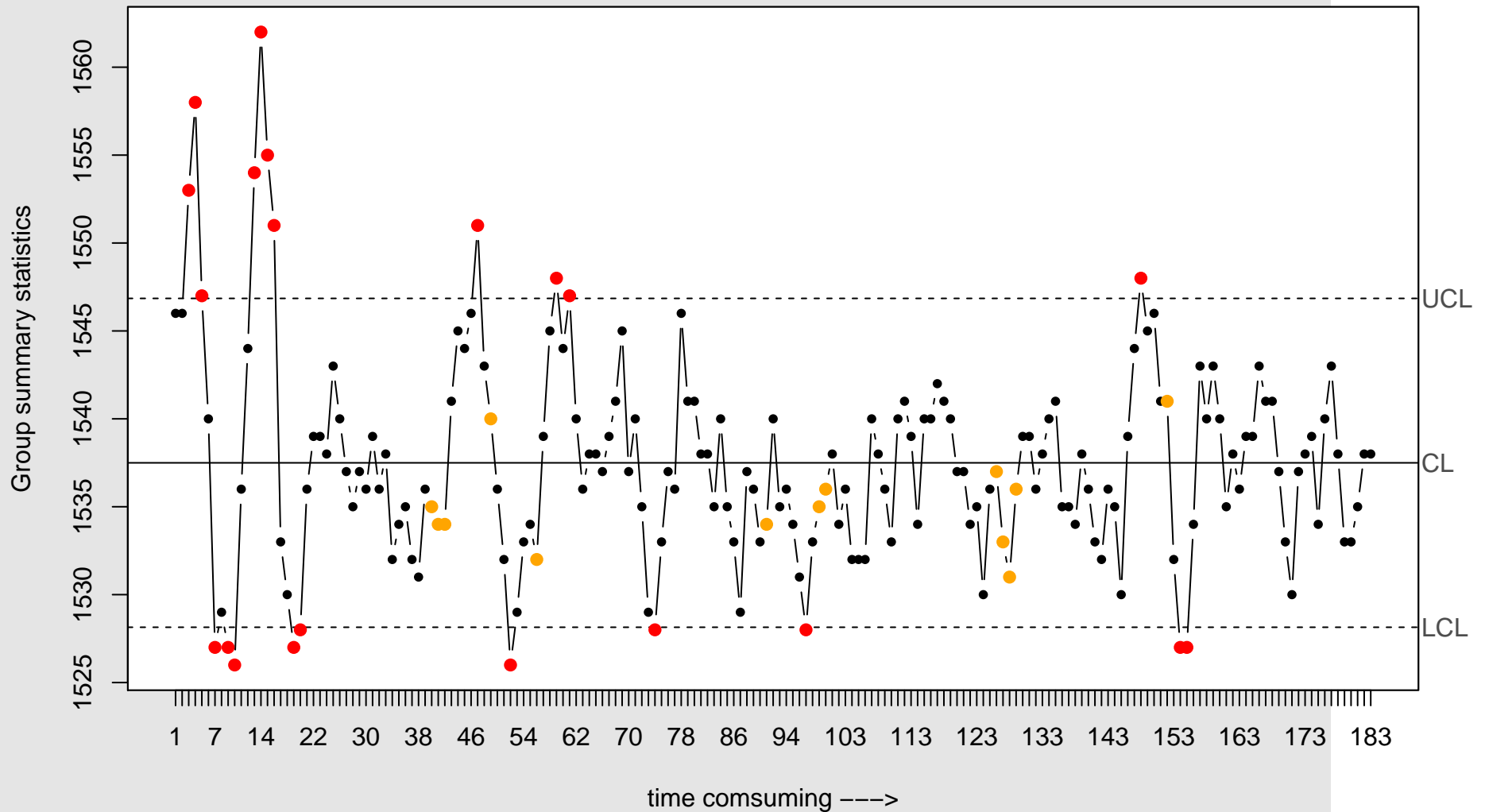
Number of groups = 183
Center = 1537.497   LCL = 1528.145   Number beyond limits = 21
StdDev = 3.11745   UCL = 1546.85   Number violating runs = 13

321th column point of this product

Group summary statistics

UCL
CL
LCL

1 7 14 22 30 38 46 54 62 70 78 86 94 103 113 123 133 143 153 163 173 183

time comsuming –––>

Number of groups = 183
Center = 1548.104
StdDev = 3.239225

LCL = 1538.386
UCL = 1557.822

Number beyond limits = 19
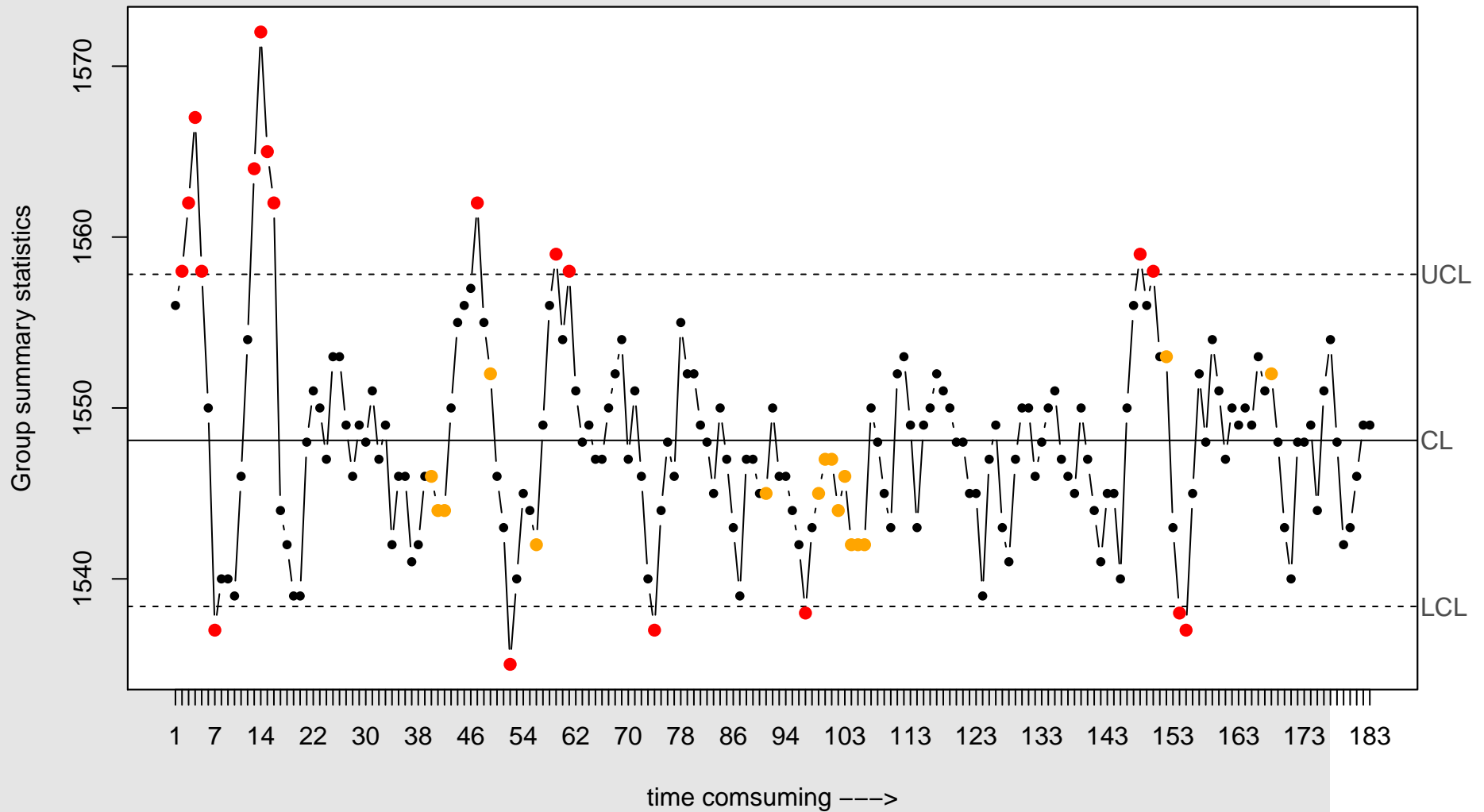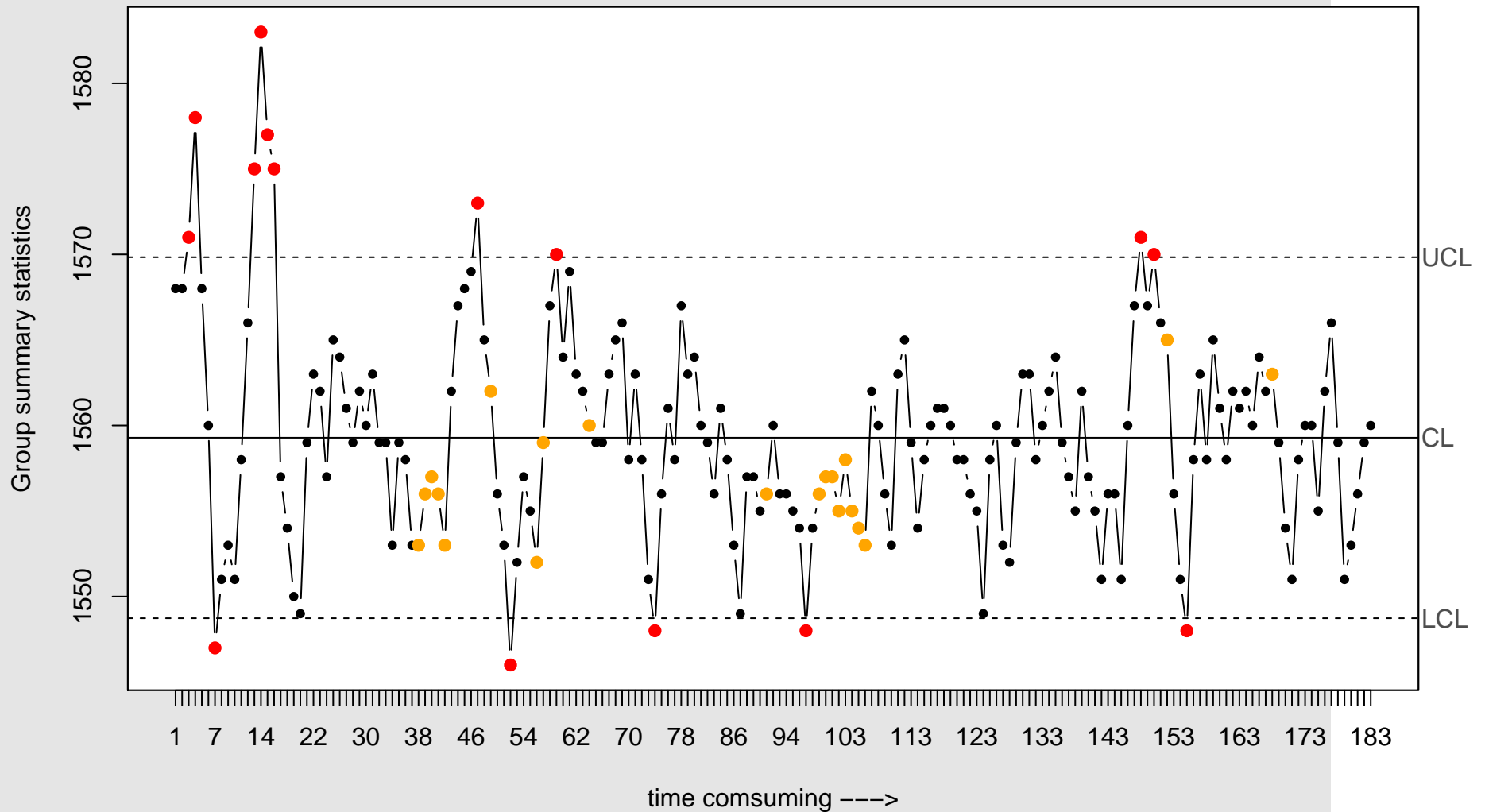Number violating runs = 16

322th column point of this product

Group summary statistics

time comsuming ––––>

Number of groups = 183
Center = 1559.284
StdDev = 3.516873

LCL = 1548.734
UCL = 1569.835

Number beyond limits = 15
Number violating runs = 20