BREAK LOOP

PURPOSE
Terminate a sequential loop.

DESCRIPTION
A sequential loop is one that has a defined start and stop value and a constant increment. The values for the start, increment, and stop can have real values (i.e., DATAPLOT is not limited to integer loops). DATAPLOT loops can have either a positive or a negative increment.

Sometimes it is convenient to terminate a loop before the last value has been incremented. For example, a loop may be iterating a calculation until some convergence criterion is reached. The BREAK LOOP command is used for this purpose. In effect, it allows the LOOP to function as a DO WHILE type of loop (DATAPLOT does not provide any formal DO WHILE or REPEAT UNTIL control structure at this time). The BREAK LOOP command is almost always contained within an IF block.

SYNTAX
BREAK LOOP

EXAMPLES
LOOP FOR ITER = 1 1 MAXITER
...
IF CONV <= 0.0001
  BREAK LOOP
END OF IF
END OF LOOP

DEFAULT
None

SYNONYMS
None

RELATED COMMANDS
END OF LOOP = Normal termination of a loop.
LOOP = Execute a sequential loop.
IF = Conditionally execute commands.

APPLICATIONS
Program control structure

IMPLEMENTATION DATE
94/4
PROGRAM

  FEEDBACK OFF
  . Computes Least Absolute Deviations fit
  . using iteratively re-weighted least squares.
  . The following assumes that a string F has been defined before
  . calling this macro to define the type of fit. E.g.,
  . LET STRING F = FIT Y X
  WEIGHT
  ^F
  LET MAXITER = 10
  LOOP FOR K = 1 1 MAXITER
    LET RESOLD = RES
    LET MED = MEDIAN RES
    LET TEMP = ABS(RES - MED)
    LET MAD = MEDIAN TEMP
    LET S = MAD/0.6745
    LET U = RES/S
    LET TEMP = ABS(RES)
    LET C = MEDIAN TEMP
    LET TAG = ABS(Y - PRED)
    LET WT = C/TAG SUBSET TAG > C
    LET WT = 1 SUBSET TAG <= C
    WEIGHTS WT
    ^F
    .
    LET DELTA = (RESOLD - RES)**2
    LET NUM = SUM DELTA
    LET NUM = SQRT(NUM)
    LET DELTA2 = RESOLD*RESOLD
    LET DENOM = SUM DELTA2
    LET CONV = NUM/DENOM
    IF CONV <= 0.0001
      BREAK LOOP
    END OF IF
  END OF LOOP
  END OF LOOP