1 PURPOSE:

STATS computes the following statistics for scalar series:

MEAN:

\[ \bar{u} = \frac{1}{n} \sum_{k=1}^{n} u_k \]

MEAN SQUARE:

\[ \bar{u}^2 = \frac{1}{n} \sum_{k=1}^{n} u_k^2 \]

ROOT MEAN SQUARE:

\[ u_{rms} = (\bar{u}^2)^{\frac{1}{2}} \]

VARIANCE:

\[ \sigma_u^2 = \bar{u}^2 - \bar{u}^2 \]

STANDARD DEVIATION:

\[ \sigma_u = (\sigma_u^2)^{\frac{1}{2}} \]

SKEWNESS:

\[ = \frac{1}{n\sigma_u^3} \left[ \sum_{k=1}^{n} u_k^3 - \left( 3\bar{u} \sum_{k=1}^{n} u_k^2 + 2n\bar{u}^3 \right) \right] \]

KURTOSIS:

\[ = \frac{1}{n\sigma_u^4} \left[ \sum_{k=1}^{n} u_k^4 - \left( 4\bar{u} \sum_{k=1}^{n} u_k^3 + 6\bar{u}^2 \sum_{k=1}^{n} u_k^2 - 3n\bar{u}^4 \right) \right] \]

The user can create a series from which the series mean value has been removed.
2 EXECUTION:

Launch program by entering -

stats (or l-stats)

"STATS: (DATE) (TIME)"
"LAST UPDATE: 02-NOV-81"

"ENTER INPUT FILE NAME:"
-enter file name; or ' $$$ ' to exit program

"Exclude pad value from statistics y/n?"
-enter 'y' or 'n'

(Program prints out the header and the statistics)

"DO YOU WISH TO REMOVE THE MEAN?"
-enter 'Y' or 'N'

(if YES)

"ENTER OUTPUT FILE NAME:"
-enter file name

(Program prints out the header of the newly-created file, and the first five and the last five data points contained in the file)

"ENTER INPUT FILE NAME:"
-enter new file name; or ' $$$ ' to exit the program

3 OUTPUT:

If mean is removed from the original series, then a new Ocean Format file series with mean removed is output to disk.