Computational Astrophysics

Exercise Sheet 3 - Part 1

1. Modify your programs for Exercise sheet 2, Questions 2, 3 and 4, to:

   (a) Separate the input/output from the calculations by encapsulating the latter in function or subroutine subprograms.

   (b) Verify the input data to be in the range expected (checking that the values entered by the user are sensible)

   (c) Enable the calculation to be repeated with different data without having to return to the operating system.

   (d) Vary one input parameter over a given range and produce a table of results, which would be suitable for input to a graph plotting program.

   (e) If you know how to, use output formatting to arrange the results from (d).

   An example solution for Question 5 of Sheet 2 is given on the Computational Astrophysics website at:

   `http://star-www.st-andrews.ac.uk/~tr9/comp_astro/`

2. Select one of Exercises 2, Questions 2, 3, or 4, modified at least as in 1(a) to (d) above, to be submitted as an assessed exercise. To submit e-mail a copy of the fortran 90 source code to `spd3@st-and.ac.uk`. Code will be assessed on workability, readability and adherance to good fortran programming practise as outlined in the lectures.

   Your source code file should be sent to my email mailbox by 9 am on 28th February at the latest.

SPD 20/02/06 (based on PWH 08/02/1997)