Updated 9/9/2021
Explanations:

- **GASP1.EXE:**

  Calculates ***pressure*** at a specified temperature using the equilibrium compositions of coexisting garnet and plageoclase in the assembalge Grt, Al_2SiO_5, Plag, Qtz (GASP). The source of experimental and thermodynamic data are listed in the program

- **GT-BT_T1.EXE:**

  Calculates ***temperature*** at a specified pressure using the equilibrium compositions of coexisting garnet and Biotite.

- **gb-gasp1.exe:**

  Calculates both ***pressure and temperature*** simultaneously using the equilibrium compositions of garnet, plagioclase and biotite in the assemblage Grt, Al_2SiO_5, Plag, Qtz (GASP) plus biotite.

- **GTPX-TEM.EXE:****

  Calculates ***temperature*** at a specified pressure using the equilibrium compositions of coexisting garnet and (a) clinopyroxene or (b) orthopyroxene.

- **GT-AX.EXE:**

  Calculates activities of garnet end-member components (Alm, Pyr, Gros, Spess) from compositions of garnet using the garnet solution model of Ganguly et al. (1996: CMP)

**The program for Gt-Cpx within this package has been corrupted. A simplified version of this thermometry, using the Ganguly et al. (1996), Eq. 15 plus correction for Ca and Mn effects (Grt) as in Lee & Ganguly (1987), is as follows. This equation has been evaluated for samples containing Grt-Opx-Cpx assemblages and found to yield similar temperature as Grt-Opx thermometry of L & G.

$$T(C) = \frac{4100 + 11.07 * P(kb) + 1510 * [X(Ca) + X(Mn)]^{Grt}}{lnK_D + 2.40} - 273$$

where

$$K_D = \frac{\left({}^{Fe}/_{Mg}\right)^{Grt}}{\left({}^{Fe}/_{Mg}\right)^{Cpx}}$$