A Grid of Model Atmospheres for Cool Stars

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An extensive grid of spherically symmetric model atmospheres of stars with

- $2500 \text{ K} \leq T_{\text{eff}} \leq 8000 \text{ K}$,
- $-1.0 \leq \log g \ \ (= \log GM/R^2) \leq 5.0$ (cgs units),
- different combinations of M and R,
- $-5 \leq [A/H] \leq 1$, and
- a number of CNO abundance combinations

is being constructed with an updated version of the MARCS program.

Special efforts are made to reach accuracy and completeness in opacity data. Opacity sampling is used with 10,000 and (for a minority of models) 90,000 wavelength points. Synthetic spectra are also provided.

We shall show how these classical models may be used to illustrate important physical properties of cool star atmospheres.