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Parameters and chemical composition of γ Tau

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PARAMETERS AND CHEMICAL COMPOSITION OF γ TAU

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(29 December 1991)

A model-atmosphere analysis of γ Tau is based on the spectrum taken with the echelle-spectrometer ESPAC with CCD device (Klochkova *et al.*, 1991) at 6 m telescope of Special Astrophysical Observatory. The spectral wavelength range is $\lambda\lambda$ 4100–6600 Å; the spectrum consists of 24 bands, each 30 Å wide. The signal-to-noise ratio is 100, the spectral resolution is $\Delta\lambda = 0.2$ Å.

The atmosphere parameters of γ Tau determined are as follows:

—The effective temperature T_{eff} was obtained from: (a) the scale of the effective temperatures, (b) the color index B–V, and (c) the energy distribution. The average value is $T_{\text{eff}} = 5000$ K (Mishenina *et al.*, (1991).

—The gravity acceleration $\lg g$ has been obtained from: (a) the distance modulus of the Hyades and (b) the ionization equilibrium for iron. The average value is $\lg g = 2.7$.

—The turbulent velocity, $V_t = 2$ km/s.

Chemical composition has been obtained with the aid of the WIDTH-6 software and the atmosphere model with $T_{\text{eff}} = 5000$ K and $\lg g = 2.7$. The oscillator strengths $\lg gf$ were adopted from Gurtovenko and Kostyk (1989).

Abundances, relative to the solar values, were determined for the following elements: [O] = –0.15, [Na] = 0.40, [Mg] = 0.29, [Si] = 0.05, [Ca] = 0.12, [Ti] = 0.08, [V] = 0.12, [Mn] = 0.07, [Fe] = 0.00, [Co] = 0.15, [Ni] = 0.09, and [Ba] = 0.20.

These values are similar to the solar ones, only a slight excess of sodium and deficiency of oxygen have been found.

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