

# Turkish Journal of Physics



Turkish Journal

of

Physics

Radial and Nonradial Oscillations of 63 Her (HD155514 = HR6391)

Rikkat CİVELEK, Nilgün KIZILOĞLU, Halil KIRBIYIK  
Physics Department, Middle East Technical University  
06531, Ankara-TURKEY  
e-mail: civelek@newton.physics.metu.edu.tr

 [Keywords](#)  
 [Authors](#)



[phys@tubitak.gov.tr](mailto:phys@tubitak.gov.tr)

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**Abstract:** An attempt has been made toward explaining the observed frequencies in 63 Her. A sequence of evolutionary models have been calculated up to a point where stellar parameters match the observed luminosity and effective temperature of 63 Her. Radial and nonradial oscillations frequencies were obtained for a series of masses 1.85, 1.90 and 1.95  $M_{\odot}$  and eighth models which represent best the pulsations of 63 Her are given in this paper. Calculations are restricted to low harmonic degrees ( $l=0,1,2,3$ ). Six of the eighth observed frequencies quoted in literature were obtained. These we obtained for the model of mass 1.90  $M_{\odot}$ . The observationally measured frequency 220.7  $\mu$  Hz, which is classified as a second harmonic radial oscillation, and five of the observed nonradial modes were obtained at the harmonic degree  $l=3$ . The difference between the observed and calculated frequencies are ( $\nu_{n/l,c} - \nu_{o,b}$ ) = 0.3, 0.8, 0.7, 0.2, and 0.7  $\mu$  Hz with  $n/l = -15/3, -12/3, -9/3, -7/3, -3/3$ , respectively.

**Key Words:** Stars: 63 Her, pulsations, evolution

Turk. J. Phys., **26**, (2002), 185-192.

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