Erratum: Massive Stars, Relativistic Polytropes, and Gravitational Radiation

WILLIAM A. FOWLER

California Institute of Technology, Pasadena, California

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In this paper:

(1) Equation (20) should read

$$\eta_n=\frac{3}{4\pi}(n+1)^3\frac{\mathfrak{R}^4}{aG^3}\left(\frac{M_n}{M}\right)^2.$$

The exponent 4 was incorrectly omitted in $\mathfrak{R}^4$.

(2) In the first full paragraph following Eq. (36), it is stated that "... the customary classical argument indicates that a star in equilibrium is not stable to sudden (adiabatic) contraction or expansion when $E_{eq}>0$." This should read: ... is not stable to sudden (adiabatic) contraction or expansion for radii smaller than those at the point at which E_{eq}/Mc^2 is a minimum. For a polytropic structure with index $n=3$, the condition for stability from Eqs. (19), (24), (29), and (31) is therefore

$$R\geq(3/\pi)^{\frac{1}{3}}(R_3/\beta)\,(2GM/c^2)=(6.8/\beta)\,(2GM/c^2),$$

which is just twice the value given by the erroneous condition $E_{eq}>0$. This can be rewritten as

$$\beta/6\approx\Gamma_1-4/3\gtrsim 1.12(2GM/Rc^2),$$

where $\Gamma_1=d\ln p/d\ln\rho$. Classically, $\Gamma_1-4/3$ averaged throughout the star must exceed zero for stability. General relativity sets an even more stringent requirement on this quantity for stability.

Erratum: Spherical Nuclei with Simple Residual Forces

LEONARD S. KISSLINGER

Western Reserve University, Cleveland, Ohio

AND

RAYMOND A. SORENSEN

Carnegie Institute of Technology, Pittsburgh, Pennsylvania

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The following changes should be made:

(1) In Eq. (23) replace $U_jU_{j'}+V_jV_{j'}$ by $U_jV_{j'}+U_{j'}V_j$. In Eq. (48) the $\alpha_{j'}$ should be $\alpha_{j'}^\dagger$. In Eq. (70) the square bracket should have a minus sign instead of a plus sign. In Eq. (83) replace π by $\sqrt{\pi}$ and $B(\mathrm{E2})$ by $B(\mathrm{E2})_{0\to 2}$.

(2) In Eq. (A3) the phase should be $(-1)^{l_1+l_2+L+j_1+j_2}$ instead of $(-1)^{l_1+l_2+j_1+j_2}$. In Eq. (A4) the phase should be $(-1)^{l_2+j_2+l_3+j_3+1-L}$ instead of $(-1)^{l_1+j_1+l_3+j_3+1-L}$.

(3) The Fig. 1 caption should read, "The coupling parameter $X/2=5/4\pi\langle r^2\rangle_\mu^2\chi/2$ chosen ..."; the factor of 1/2 is missing. In Fig. 2 caption, the power of A should be $-3/2$ rather than $-5/3$ (wherever $A^{-5/3}$ appears, replace by $A^{-3/2}$).

(4) In Tables VIII to XVI there are sign changes in some of the one-phonon components of the wave functions. To get the wave functions with correct relative phases please make the following sign changes: In Tables VIII, XIII, and XIV, $C_{3/2\,12}{}^{1/2}$, $C_{3/2\,12}{}^{3/2}$, $C_{1/2\,12}{}^{3/2}$, $C_{5/2\,12}{}^{5/2}$, $C_{7/2\,12}{}^{5/2}$, $C_{7/2\,12}{}^{7/2}$, and $C_{9/2\,12}{}^{9/2}$ change sign.

In Tables IX, X, XV, and XVI, $C_{3/2\,12}{}^{3/2}$, $C_{5/2\,12}{}^{3/2}$, $C_{5/2\,12}{}^{5/2}$, $C_{3/2\,12}{}^{5/2}$, $C_{7/2\,12}{}^{7/2}$, and $C_{11/2\,12}{}^{11/2}$ change sign.

In Tables XI and XII, $C_{3/2\,12}{}^{1/2}$, $C_{1/2\,12}{}^{3/2}$, $C_{3/2\,12}{}^{3/2}$, $C_{5/2\,12}{}^{5/2}$, $C_{7/2\,12}{}^{5/2}$, $C_{5/2\,12}{}^{7/2}$, $C_{7/2\,12}{}^{7/2}$, $C_{9/2\,12}{}^{9/2}$, and $C_{13/2\,12}{}^{13/2}$ change sign.

(5) In Table XII the values of λ for Pt^{195} and Pt^{197} should be 1.64 and 1.81 instead of 2.64 and 2.81, respectively.