The covering SU(3) group over anisotropic harmonic oscillators KAZUKO SUGAWARA-TANABE, Otsuma Women’s University, Tama, Tokyo 206-8540, KOSAI TANABE, RIKEN, Nishina Center, Saitama 351-0198, AKITO ARIMA, Science Museum, Japan Science Foundation, Tokyo 102-0091, BRUNO GRUBER, Southern Illinois University, Carbondale, Il 62901 — We propose new non-linear boson transformation by which all the anisotropic oscillator states can be embedded in the SU(3) bases. We start from the oscillator Hamiltonian without spin- orbit interaction, and suppose that three oscillator frequencies have an integral rational ratio $a : b : c$. In order to construct a SU(3)-invariant expression, we express the harmonic oscillator boson operator $c_k$ ($k = x, y, z$), in terms of a $m$-fold product of new bosons $s_m$ ($m = a, b, c$), by requiring $s^\dagger_m s_m = m c^\dagger_k c_k$. The general form of the new bosons $s_m$, for any positive integer $m$, is given by $c_k = [m \prod_{r=1}^{m-1}(\hat{n}_m + r)]^{-1/2}(s_m)^m$, with $\hat{n}_m = s^\dagger_m s_m$. Applying the analogy of Elliott’s group operators, we obtain a similar set of group operators from new bosons $s_a$, $s_b$ and $s_c$, i.e., $\hat{Q}_q$ for $q = 0, \pm 1$ and $\pm 2$, and $\hat{l}_k$ for $k = a, b$ and $c$. Then, the commutation relations among these 8 operators are closed, and they commute with $H$. Together with Casimir operator and two operators which have diagonal form in number operators, i.e., $\hat{Q}_0$, and $\hat{Q}_2 + \hat{Q}_{-2}$, we can classify the single-particle states in $N_{sh}$, and find the new magic numbers for the triaxially deformed field.