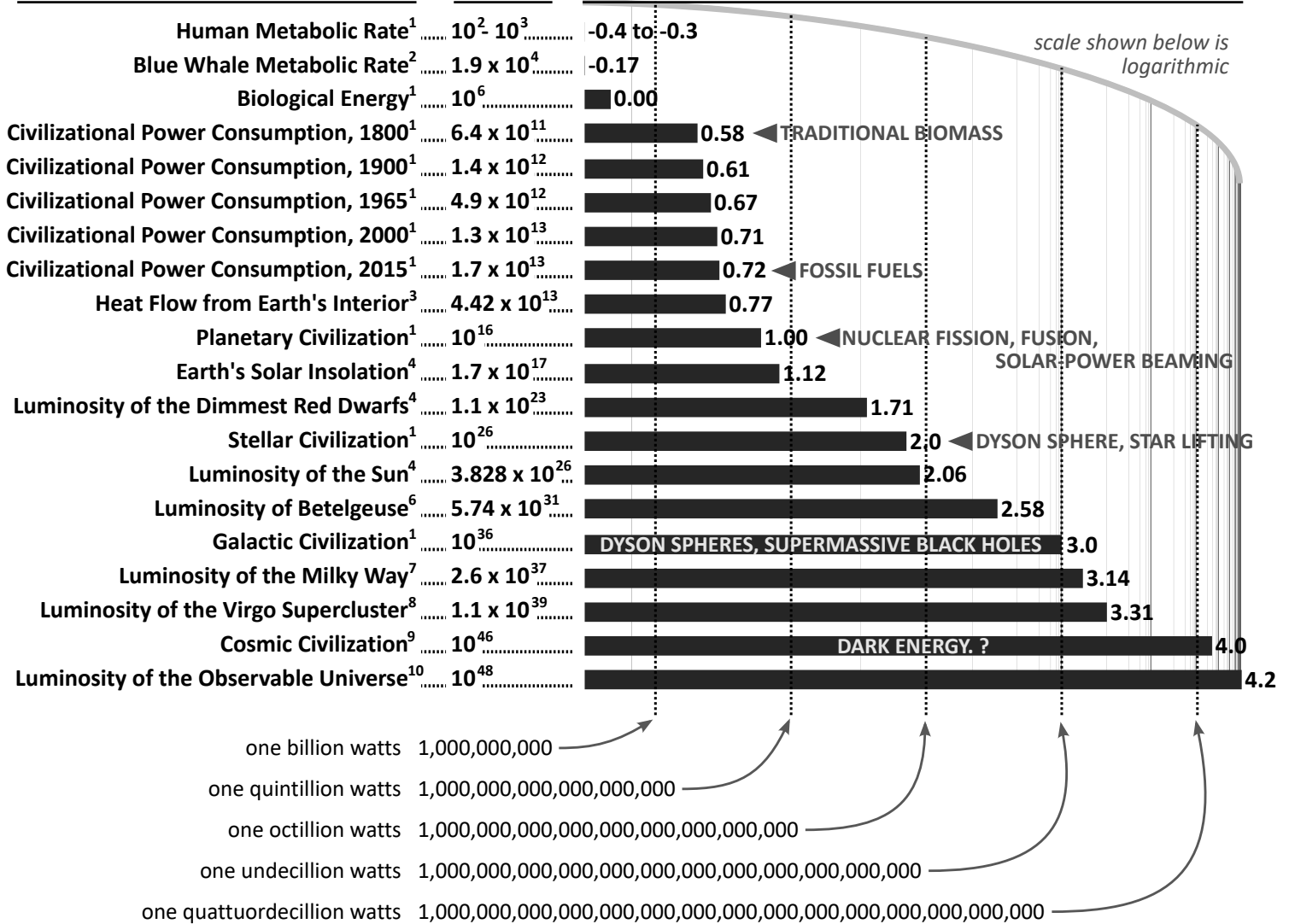


Kardeshev Scale

Figure and Sources

*Energy Consumption
(Watts)*

Rating according to Kardeshev Scale



- 1.) Gray, R. H. "[The Extended Kardashev Scale](#)". The Astronomical Journal 159(5): p. 228. April 2020.
- 2.) Lockyer, C. "[Growth and energy budgets of large baleen whales from the Southern Hemisphere](#)". Food and Agriculture Organization 3, pp. 379-487. 1981.
- 3.) Pollack, H. N., Hurter, S. J., Johnson, J. R. "[Heat flow from the Earth's interior: Analysis of the global data set](#)". Review of Geophysics 31(3), pp. 267-280. August 1993.
- 4.) Prša, A., Harmanec, P., Torres, G., et al. "[Nominal values for selected solar and planetary quantities: IAU 2015 Resolution B3](#)". IAU 2015 Resolution B3, The Astronomical Journal 152(2): 41. August 2016.
- 5.) Mamajek, E. "[A Modern Mean Dwarf Stellar Color and Effective Temperature Sequence](#)". University of Rochester, Department of Physics and Astronomy. March 2021.
- 6.) Smith, N., Hinkle, K. H., Ryde, N. "[Red Supergiants as Potential Type II In Supernova Progenitors: Spatially Resolved 4.6 \$\mu\$ m CO Emission Around VY CMa and Betelgeuse](#)". The Astronomical Journal 137(3), pp. 3558–3573. March 2009.
- 7.) Kent, S. M., Dame, T. M., Fazio, G. "[Galactic structure from the Spacelab infrared telescope. II-Luminosity models of the Milky Way](#)". The Astrophysical Journal 378, pp. 131-138. September 1991.
- 8.) Einasto, M., Saar, E., Liivamägi, L. J., Einasto, J., Tago, E., Martínez, V. J., Starck, J.-L., Müller, V., Heinämäki, P., Nurmi, P., Gramann, M., Hütsi, G. "[The richest superclusters. I. Morphology](#)". Astronomy and Astrophysics 476(2), pp. 697-711. December 2007.
- 9.) Kaku, M. [Parallel Worlds: A Journey Through Creation, Higher Dimensions, and the Future of the Cosmos](#). Doubleday Books. 2005.
- 10.) Wijers, R. "[On the stellar luminosity of the Universe](#)". arXiv preprint astro-ph/0506218. 2005.



urbancruiseship.org
info@urbancruiseship.org
Exhibit constructed by
Richard Burd 10-14-2021