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Energy in Cosmos, Molecules and Life
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**Galaxies, stars and black holes:
their formation and energy budgets**

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Gravity, an imperceptibly weak force between individual atoms and molecules, has the dominant influence on the structures of planets, stars and galaxies. In ordinary stars, the gravitational binding energy released during their formation is small compared with that derived from nuclear fusion. But when neutron stars or black holes are involved, gravitation surpasses nuclear energy. The most powerful sources in the universe are energised by gravity: gravitation's dominance is even more prominent if we include not only electromagnetic luminosity, but power radiated via neutrinos or gravitational waves. The entire energy radiated throughout our universe's history is nonetheless only a small fraction of what is latent in its material content -- and an even tinier fraction of what is latent in space itself.