Optical observations have revealed the presence of a fundamentally new population of comets: the main-belt comets (MBCs). Observationally, these objects are unambiguously cometary, yet dynamically, they are completely asteroidal. Unlike classical comets, which originate in the cold outer solar system beyond the orbit of Neptune, the MBCs may have originated where we see them today, in the main asteroid belt inside the orbit of Jupiter. The discovery of the MBCs lends new support to the idea that main-belt objects could have been a major primordial source of terrestrial water, and presents new opportunities to probe that ancient water source. I will discuss the observations that led to the identification of this new class, the properties of the currently known MBCs, and the implications of the MBCs for astrobiology.