Billions of years ago, before there were planets and moons, the Sun was surrounded by a swirling disk of gas, known as the solar nebula. Earth and the Solar System's other planets formed out of that disk. Evidence of what happened during those long-ago events is captured in some of the debris from space that falls to Earth—meteorites. Chrondrites are the most abundant type of meteorite. These stony chunks are distinguished by the presence of chondrules, but the source of those tiny, round grains of minerals has long been a source of debate. Some scientists have argued that the grains must have condensed directly from the solar nebula, while others thought that another mechanism must have been responsible for their formation. While still a graduate student, Nagahara shed light on this mystery, showing that some chondrules contained grains that had survived melting, which indicated that the those chondrules formed not from gas in the solar nebula but from the incomplete melting of an already-solid material. Nagahara went on to introduce condensation and evaporation experiments into chondrite science, successfully condensing in the lab minerals that are known to form chondrites, such as silicate and metallic iron. In later theoretical and experimental work, Nagahara and colleagues elucidated the processes underlying condensation and evaporation in the early solar nebula, helping to deepen our understanding of how Earth and the Solar System formed.