Magnetic spherules from Triassic to Jurassic bedded chert in Southwest Japan and the western United States

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This paper describes microscopic characteristics of newly discovered magnetic spherules from radiolarian chert succession, considered as having accumulated on the ocean floor in an open-ocean realm. Rocks examined are Triassic to Jurassic radiolarian chert of the Chichibu terrane in Kyushu and the Marin Headlands terrane in California. The radiolarian chert beds are separated by siliceous claystone partings that are less than a few millimeters thick. Our microscopic and SEM examinations recognized small (mostly less than 50 microns), black magnetic spherules embedded in siliceous claystone partings. The EDX analytical results show that most magnetic spherules are composed only of Fe. Geochemical and microscopic characteristics of the magnetic spherules in the Chichibu and Marine Headlands terranes are compared with those of magnetic spherules reported from Triassic to Jurassic radiolarian chert of the Mino terrane, southwest Japan.