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High T_c : The Discovery of RBCO¹

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It was said by Emerson that “there is no history; there is only biography.” This is especially true when the events are recounted by a person who, himself, has been heavily involved and the line between history and autobiography can become blurred. However, it is reasonable to say that discovery itself is not a series of accidents but an inevitable product of each development stage of scientific knowledge as was also pointed out by Holden et al. (1) The discovery of RBCO (2,3) with R = Y, La, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu is no exception. In this presentation, I will briefly recount several events that were crucial to the discovery of RBCO: those before 1986 (4) that sowed the seeds in our group important to our later high temperature superconductivity effort; those in 1986 (5) that were critical to our discovery of the 93 K RBCO soon after the discovery of the 35 K high temperature superconductor by Müller and Bednorz (6); and those in 1987 when the barrier of the liquid nitrogen boiling temperature of 77 K was finally conquered.

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