Implications for small-body binaries from doublet craters

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Doublet craters have been recognized on the surfaces of many planets and satellites, including the Earth, Mars, and Venus. Various processes can produce crater pairs, including endogenic crater-forming processes, very oblique impacts, tidal splitting just before impact, and purely random pairing of unrelated individual impacts. Of relevance to this Workshop are binary craters produced by the near-simultaneous impact of a binary small body. In principle, attributes of paired craters can be studied to separate those formed by impacts of binary bodies from random doublets and those formed by other processes. By such studies of doublet craters, it should be possible to assess some features of the binary component of small body populations, especially in the outer solar system where small binaries are too faint to detect.

I am presenting no new research, but rather I will summarize the present state of knowledge as gleaned from the literature and will lead a discussion on this topic.