VOLUME 68, NUMBER 12 PH YSICAL REVIEW LETTERS 23 MARcH 1992

Comment on "Origins of Compositional Order in
Nipt Alloys"

d-band filling arguments suggest that all alloys of late
transition metals will phase separate (rather than order)
at low temperature since the antibonding part-of the d
band is nearly filled. Understanding the physical origins of the exceptions to this rule—most notably the observed L lp long-range ordering of NiPt—has been the focus of a number of recent investigations [1,2].
A necessary condition for long-range order (LRO) is that the formation enthalpy of the ordered phase o,

AE(p(V~, Vg, Vs) =E„(V~)—2~ [Eg(Vg)+Es(Vg)],

be negative. Here, E is the total