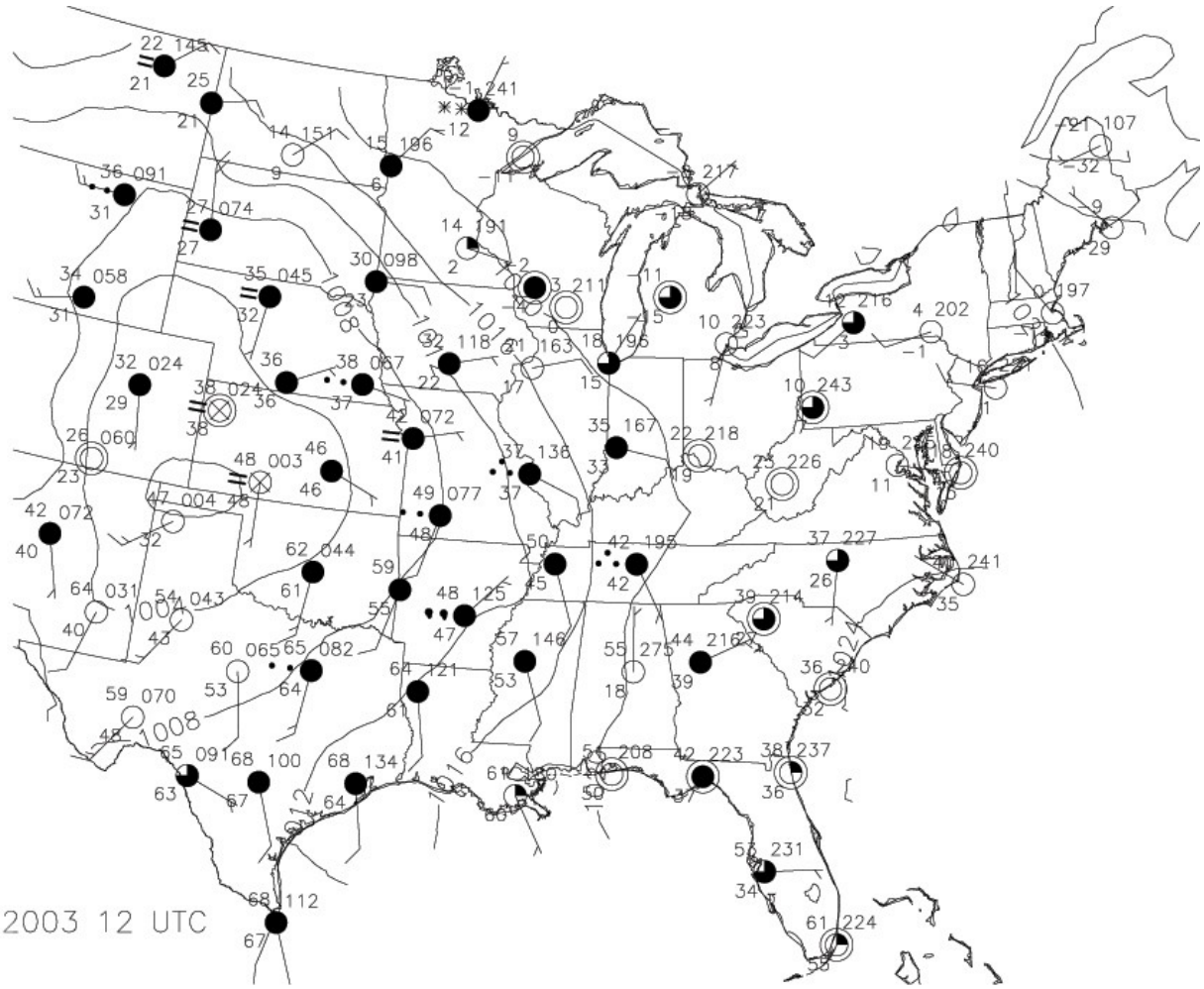
Table 6.1 Sign and magnitude of terms in gradient wind equation for all possible flow regimes in the Northern Hemisphere

Term	Northern Hemisphere			
	Cyclonic (CCW) flow around L	Anticyclonic (CW) flow around H	Anticyclonic (CW) flow around L	Cyclonic (CCW) flow around H
f	+	+	+	+
R	+	−	−	+
$\frac{\partial p}{\partial n}$	−	−	+	+
$\left(\frac{f^2R^2}{4} - \frac{R}{\rho}\frac{\partial p}{\partial n}\right)^{\frac{1}{2}}$	Always $> \frac{fR}{2}$	$< \frac{fR}{2}$ or imaginary for $\frac{f^2R^2}{4} < \frac{R}{\rho}\frac{\partial p}{\partial n}$	Always $> \frac{fR}{2}$	$< \frac{fR}{2}$ or imaginary for $\frac{f^2R^2}{4} < \frac{R}{\rho}\frac{\partial p}{\partial n}$
$-\frac{fR}{2}$	−	+	+	−
V positive for:	+ root only	Either root but $\frac{f^2R^2}{4} > \frac{R}{\rho}\frac{\partial p}{\partial n}$	+ root only	never +

Table 6.2 Sign and magnitude of terms in gradient wind equation for all possible flow regimes in the Southern Hemisphere

Term	Southern Hemisphere			
	Anticyclonic (CCW) flow around L	Cyclonic (CW) flow around H	Cyclonic (CW) flow around L	Anticyclonic (CCW) flow around H
f	−	−	−	−
R	+	−	−	+
$\frac{\partial p}{\partial n}$	−	−	+	+
$\left(\frac{f^2R^2}{4} - \frac{R}{\rho}\frac{\partial p}{\partial n}\right)^{\frac{1}{2}}$	Always $> \frac{fR}{2}$	$< \frac{fR}{2}$ or imaginary for $\frac{f^2R^2}{4} < \frac{R}{\rho}\frac{\partial p}{\partial n}$	Always $> \frac{fR}{2}$	$< \frac{fR}{2}$ or imaginary for $\frac{f^2R^2}{4} < \frac{R}{\rho}\frac{\partial p}{\partial n}$
$-\frac{fR}{2}$	+	−	−	+
V positive for:	+ root only	never +	+ root only	Either root but $\frac{f^2R^2}{4} > \frac{R}{\rho}\frac{\partial p}{\partial n}$



Copyright © 2006 by John Wiley & Sons, Inc. or related companies. All rights reserved.