$$\begin{CD}
\ldots @>>> \Omega^q(V) @>\mathrm{d}>> \Omega^{q+1}(V) @>>> \ldots \\
@. @Vf^*VV @VVf^*V @. \\
\ldots @>>> \Omega^q(U) @>\mathrm{d}>> \Omega^{q+1}(U) @>>> \ldots
\end{CD}$$