Date . .

The first assertion we can prove now: clearly the differential $d\varphi$ of the rational functions on V span the cotangent space to V at every point, and so a finite number of them do; any meromorphic form on V is then a linear combination of wedge products of these forms with meromorphic, hence rational, coefficient functions.

$\ulcorner$ $V \subset \mathbb{P}^n$.

On $U_0 = (X_0 \neq 0)$, $\quad U_0 \longrightarrow \mathbb{C}^n$ is

$$[X_0, \cdots X_n] \longmapsto \left(\frac{X_1}{X_0}, \cdots \frac{X_n}{X_0}\right)$$

a holomorphic chart.

$\Rightarrow$ $T^{*\prime}U_0$ is generated by $\{ d(X_1/X_0), \cdots, d(X_n/X_0) \}$

$\Rightarrow$ $T^{*\prime}\mathbb{P}^n$ is generated by $\{ d(X_1/X_0), \cdots, d(X_n/X_0), d(X_0/X_1),$

$\cdots d(X_n/X_1), d(X_0/X_2), \cdots d(X_n/X_2), \cdots d(X_0/X_n), \cdots d(X_{n-1}/X_n) \}$

Note that $\quad X_i/X_j = X_i/X_0 \; X_0/X_j$.

$$\Rightarrow \quad d(X_i/X_j) = d(X_i/X_0)\, X_0/X_j + X_i/X_0\, d(X_0/X_j)$$

$$= X_0/X_j \; d(X_i/X_0) - X_i/X_0 \cdot \frac{X_0^2}{X_j^2}\, d(X_j/X_0).$$

$\Rightarrow$ $T^{*\prime}V$ is generated by restrictions of $\{ d(X_1/X_0), \cdots \}$ to V.