Observation Matrix W

$$
\begin{array}{c}
\\
\text{Image 1} \\
\text{Image 2} \\
\\
\text{Image F} \\
\text{Image 1} \\
\text{Image 2} \\
\\
\text{Image F}
\end{array}
\begin{array}{c}
\begin{array}{cccc} \text{Point 1} & \text{Point 2} & & \text{Point N} \end{array} \\
\begin{bmatrix}
\tilde{u}_{1,1} & \tilde{u}_{1,2} & \cdots & \tilde{u}_{1,N} \\
\tilde{u}_{2,1} & \tilde{u}_{2,2} & \cdots & \tilde{u}_{2,N} \\
\vdots & \vdots & \vdots & \vdots \\
\tilde{u}_{F,1} & \tilde{u}_{F,2} & \cdots & \tilde{u}_{F,N} \\
\tilde{v}_{1,1} & \tilde{v}_{1,2} & \cdots & \tilde{v}_{1,N} \\
\tilde{v}_{2,1} & \tilde{v}_{2,2} & \cdots & \tilde{v}_{2,N} \\
\vdots & \vdots & \vdots & \vdots \\
\tilde{v}_{F,1} & \tilde{v}_{F,2} & \cdots & \tilde{v}_{F,N}
\end{bmatrix} \\
W_{2F\times N}
\end{array}
=
\begin{array}{c}
\begin{bmatrix}
\mathbf{i}_1^T \\
\mathbf{i}_2^T \\
\vdots \\
\mathbf{i}_F^T \\
\mathbf{j}_1^T \\
\mathbf{j}_2^T \\
\vdots \\
\mathbf{j}_F^T
\end{bmatrix} \\
M_{2F\times 3}
\end{array}
\begin{array}{c}
\begin{array}{cccc} \text{Point 1} & \text{Point 2} & & \text{Point N} \end{array} \\
\begin{bmatrix} P_1 & P_2 & \cdots & P_N \end{bmatrix} \\
S_{3\times N}
\end{array}
$$

Centroid-Subtracted Feature Points (Known)

Camera Motion (Unknown)

Scene Structure (Unknown)

Can we find M and S from W?