

...Back to Observation Matrix W

$$\begin{array}{c}
 \text{Image 1} \\
 \text{Image 2} \\
 \vdots \\
 \text{Image F} \\
 \text{Image 1} \\
 \text{Image 2} \\
 \vdots \\
 \text{Image F}
 \end{array}
 \begin{array}{cccc}
 \text{Point 1} & \text{Point 2} & \dots & \text{Point N} \\
 \tilde{u}_{1,1} & \tilde{u}_{1,2} & \dots & \tilde{u}_{1,N} \\
 \tilde{u}_{2,1} & \tilde{u}_{2,2} & \dots & \tilde{u}_{2,N} \\
 \vdots & \vdots & \vdots & \vdots \\
 \tilde{u}_{F,1} & \tilde{u}_{F,2} & \dots & \tilde{u}_{F,N} \\
 \tilde{v}_{1,1} & \tilde{v}_{1,2} & \dots & \tilde{v}_{1,N} \\
 \tilde{v}_{2,1} & \tilde{v}_{2,2} & \dots & \tilde{v}_{2,N} \\
 \vdots & \vdots & \vdots & \vdots \\
 \tilde{v}_{F,1} & \tilde{v}_{F,2} & \dots & \tilde{v}_{F,N}
 \end{array}
 \Bigg]
 =
 \begin{array}{c}
 \mathbf{i}_1^T \\
 \mathbf{i}_2^T \\
 \vdots \\
 \mathbf{i}_F^T \\
 \mathbf{j}_1^T \\
 \mathbf{j}_2^T \\
 \vdots \\
 \mathbf{j}_F^T
 \end{array}
 \begin{array}{ccc}
 \text{Point 1} & \text{Point 2} & \text{Point N} \\
 [P_1 & P_2 & \dots & P_N]
 \end{array}$$

$W_{2F \times N}$ $M_{2F \times 3}$

Centroid-Subtracted Feature Points (Known) **Camera Motion (Unknown)**

$S_{3 \times N}$
Scene Structure (Unknown)