

Frame by Frame Analysis – Nolan Ryan

An Analysis of the Pitching Motion and Mechanics of Nolan Ryan

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Glossary

GS = Glove Side

PAS = Pitching Arm Side

High-Cocked Position = The moment the PAS forearm is vertical.

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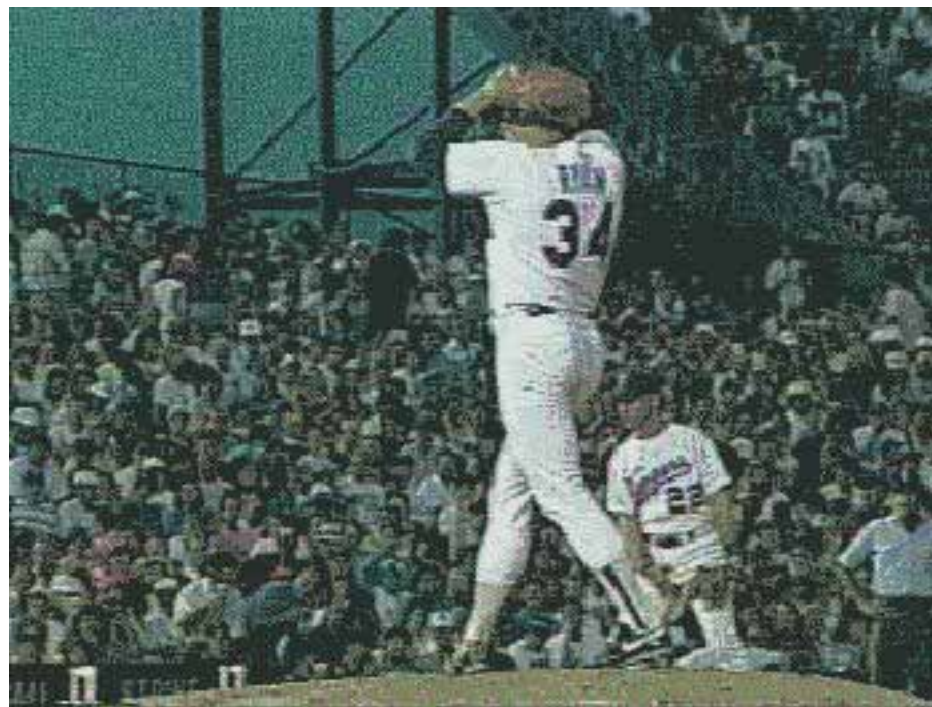
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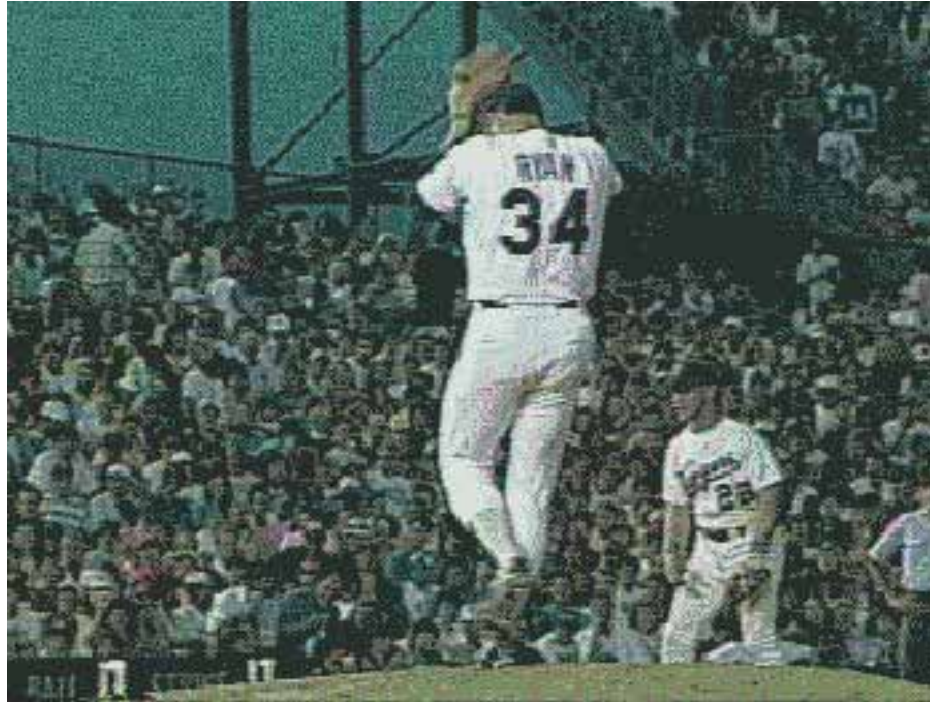
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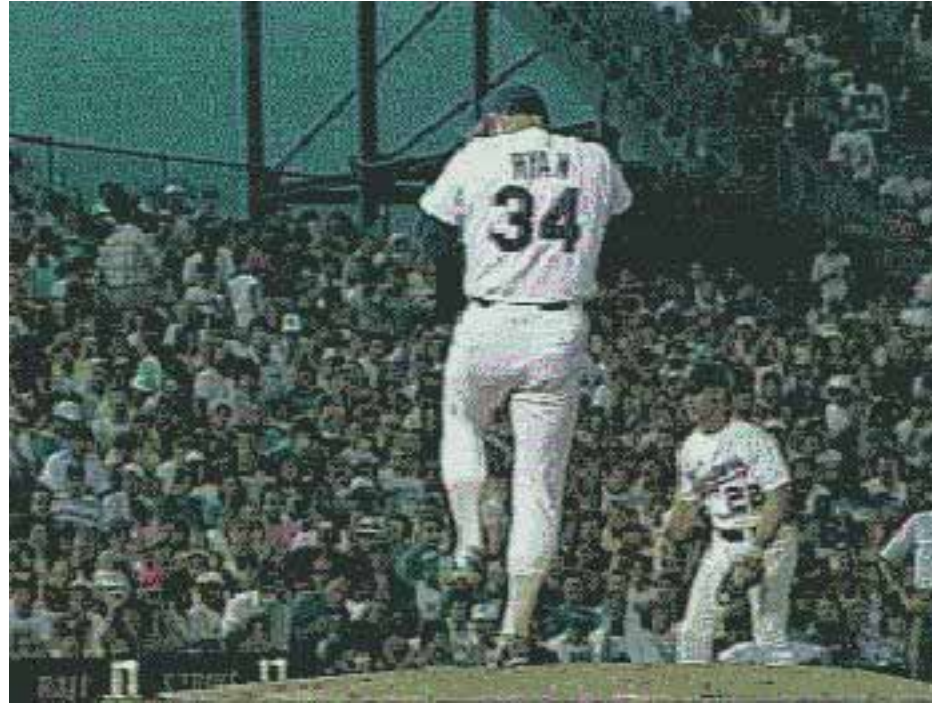
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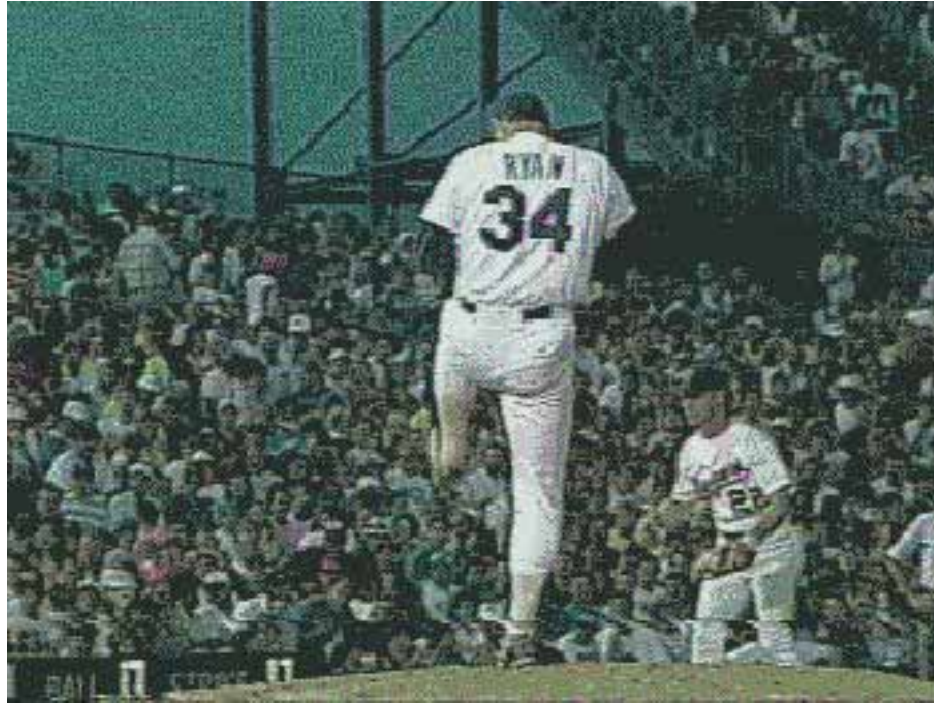
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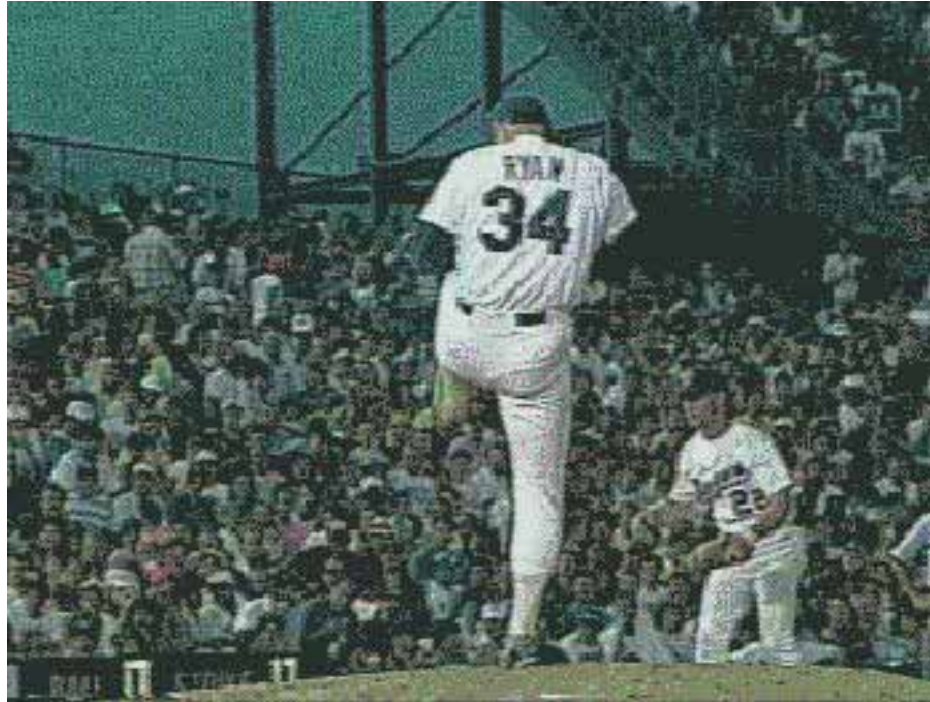
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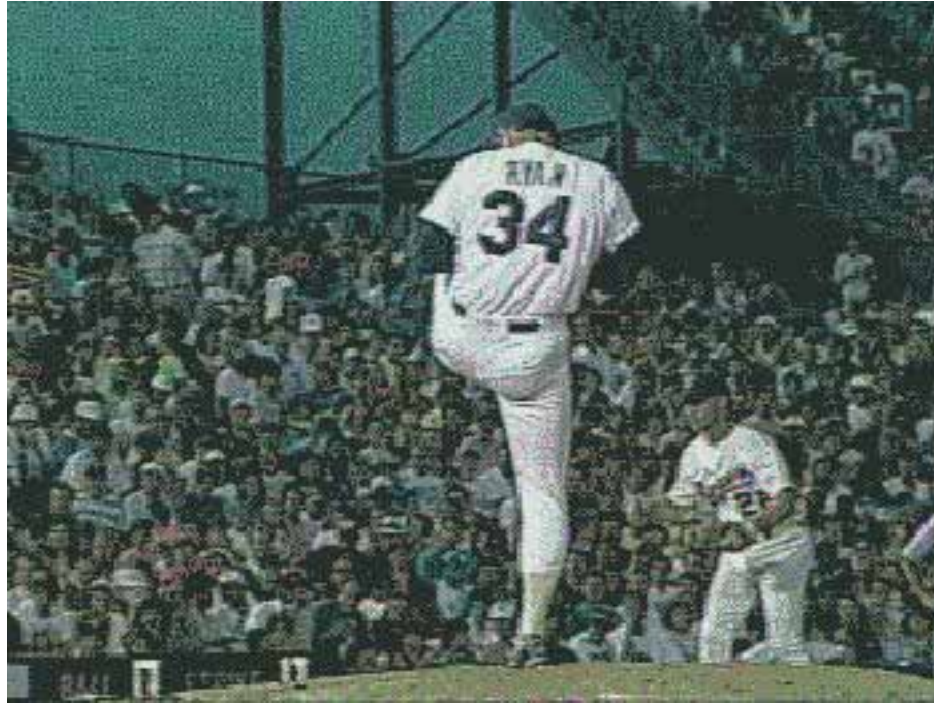
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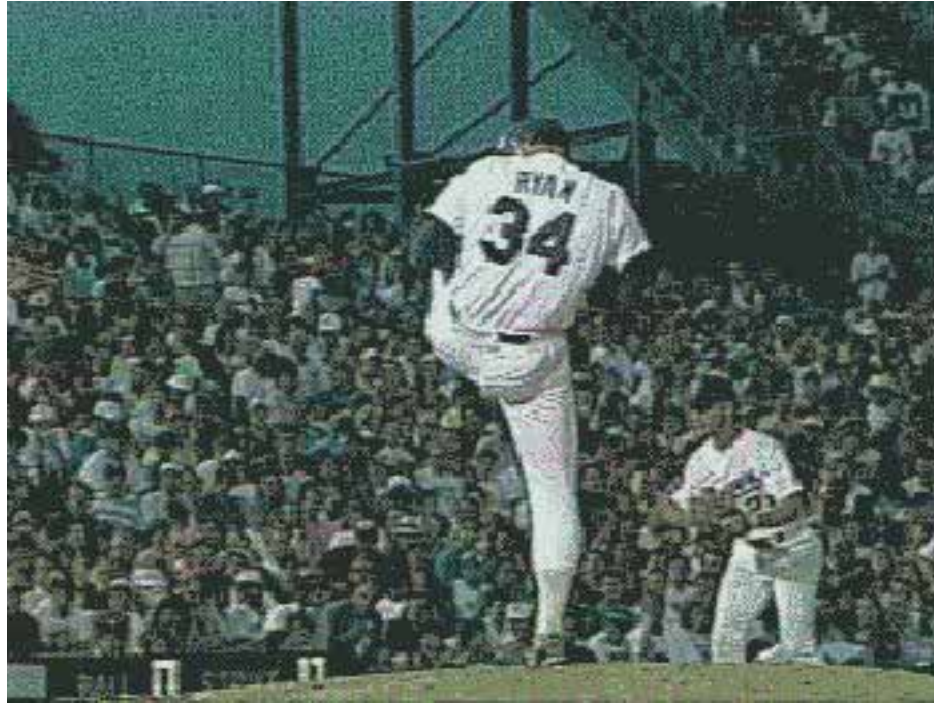


Peak of Leg Lift: Notice how, rather than coming to the Balance Point, Nolan Ryan's hips keep moving toward Home Plate throughout his leg lift. This increases his linear momentum which then increases his rotational momentum (e.g. the force with which his hips rotate).

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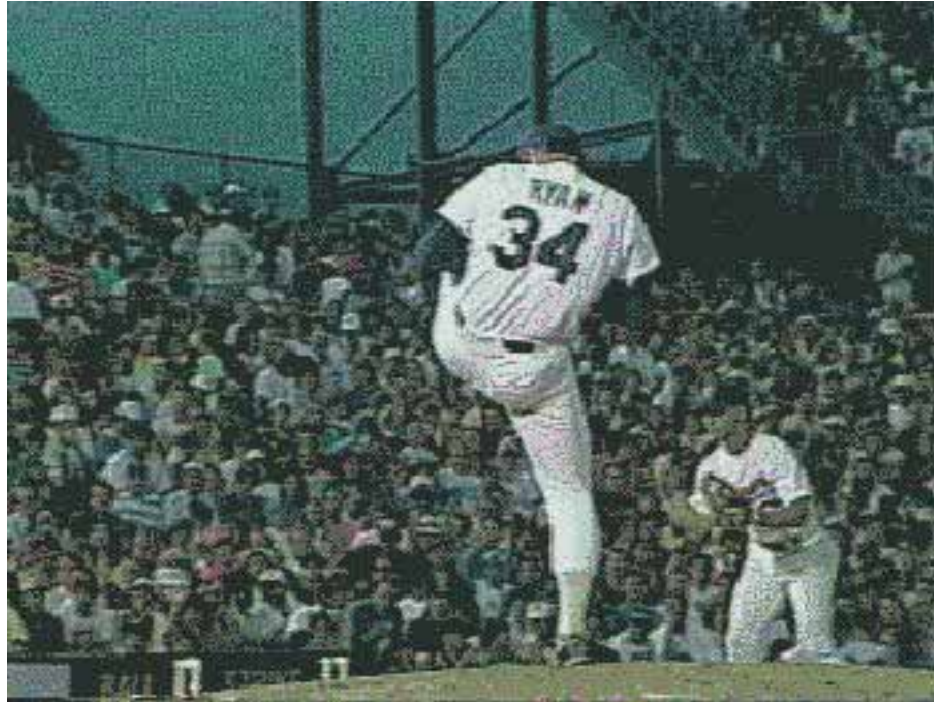


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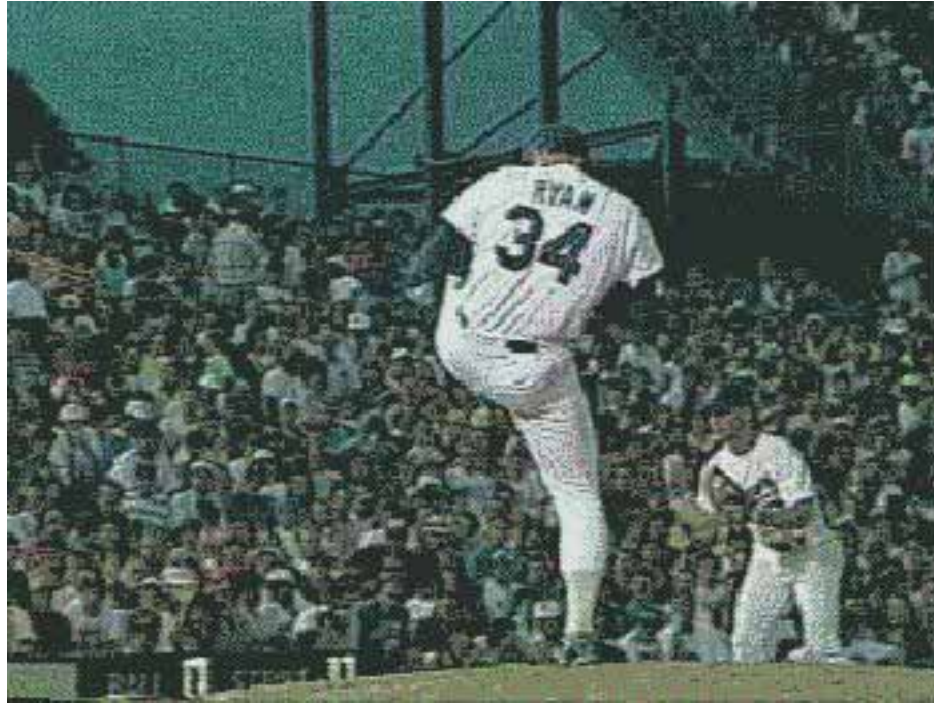


Hips Starting To Drop: Notice how Nolan Ryan's hips moved sideways toward the target long before they started to drop significantly. As a result, I think what Nolan Ryan does is better characterized as "Drive and Drop" rather than "Drop and Drive". This drive is powered by a sideways push of his PAS foot against the rubber and back toward second base.

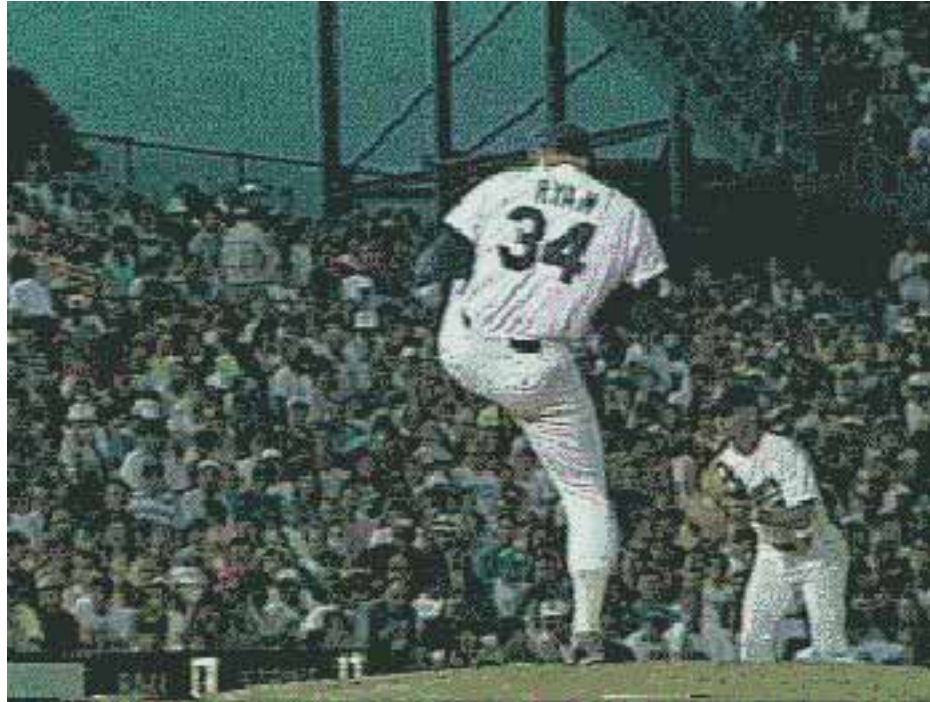
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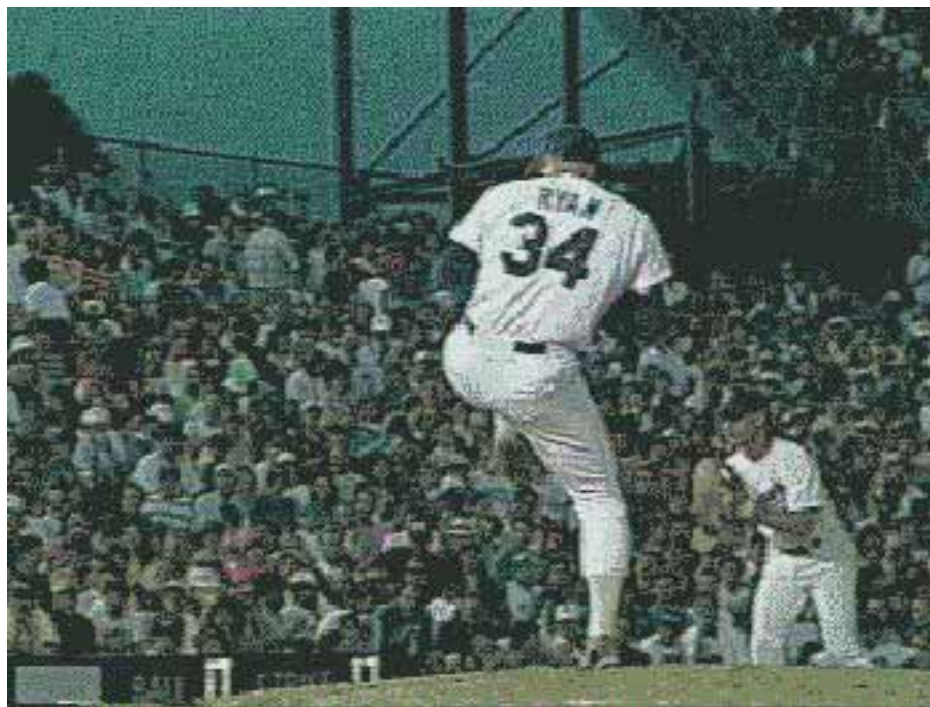
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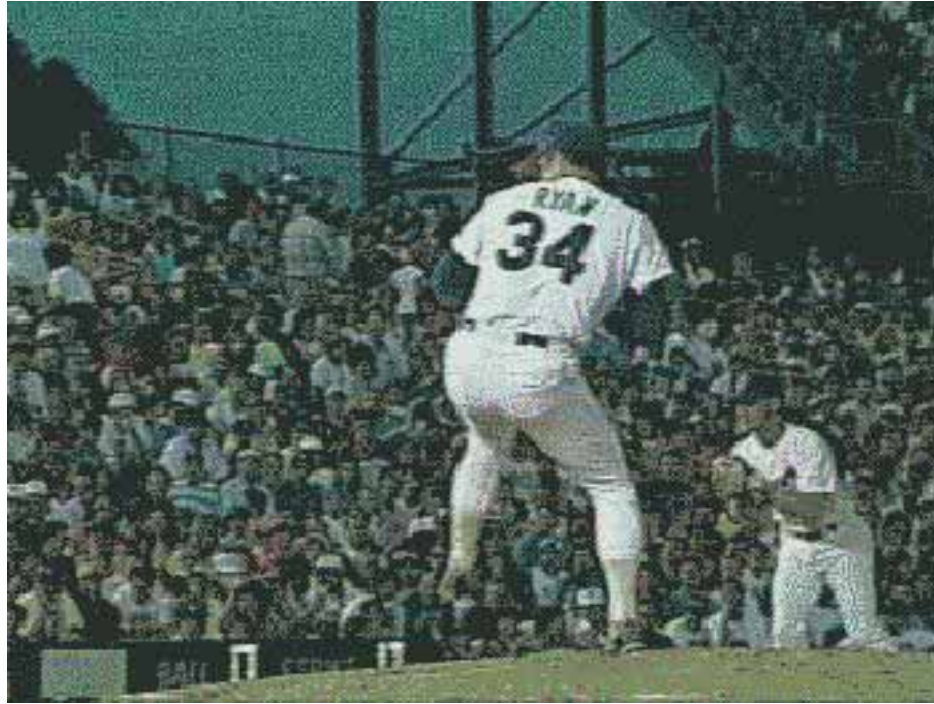
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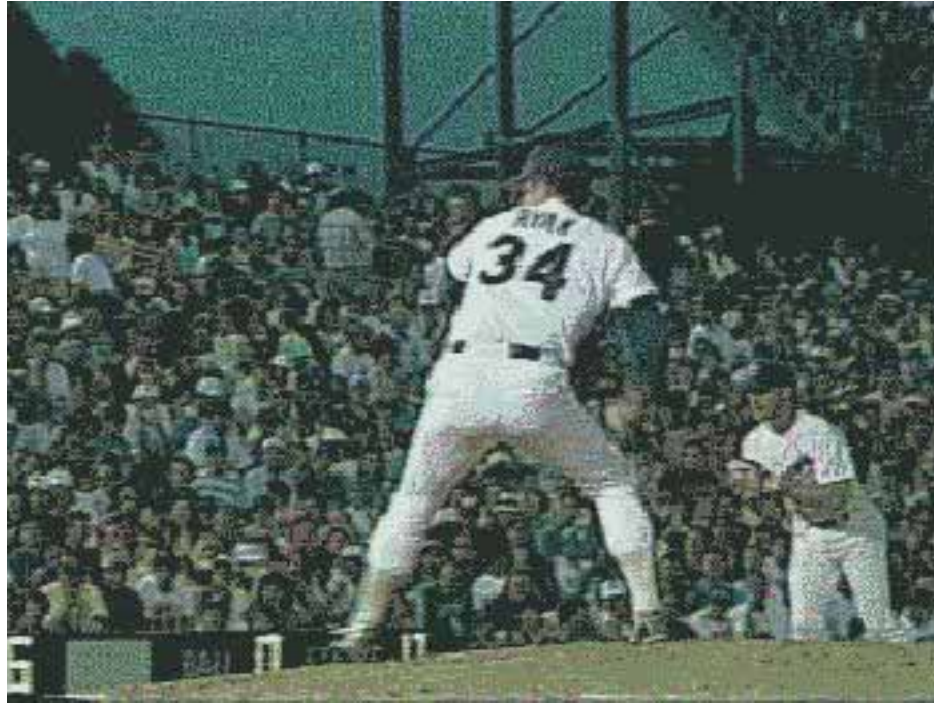
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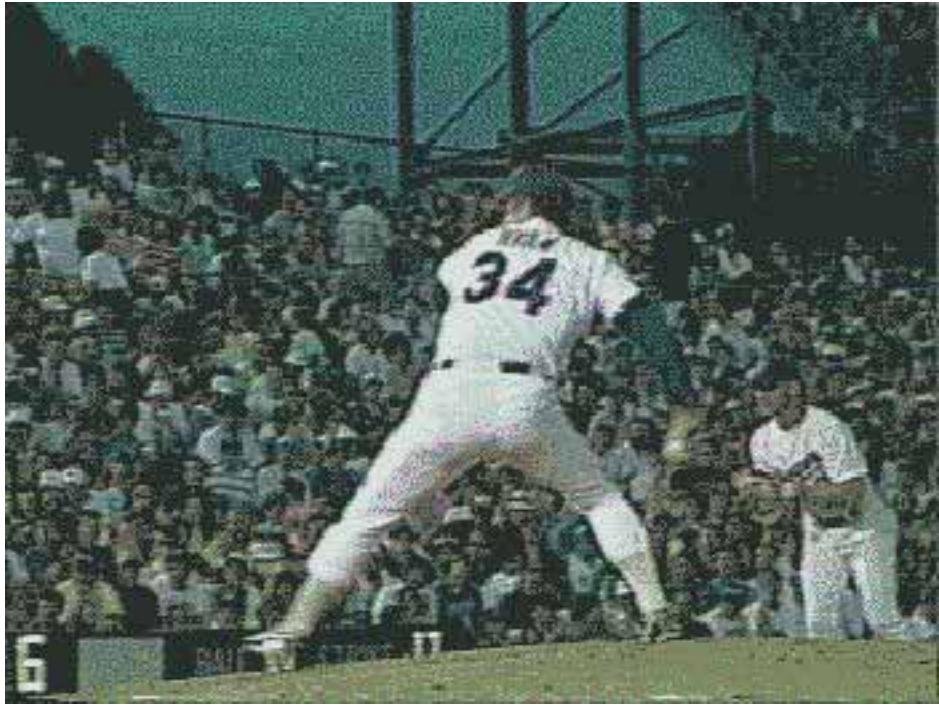
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Point Of Maximum PAS Elbow Height: Notice how Nolan Ryan's PAS elbow is several inches below the level of his shoulders. This can be hard to see because Nolan Ryan is leaning forward toward third base at the moment.

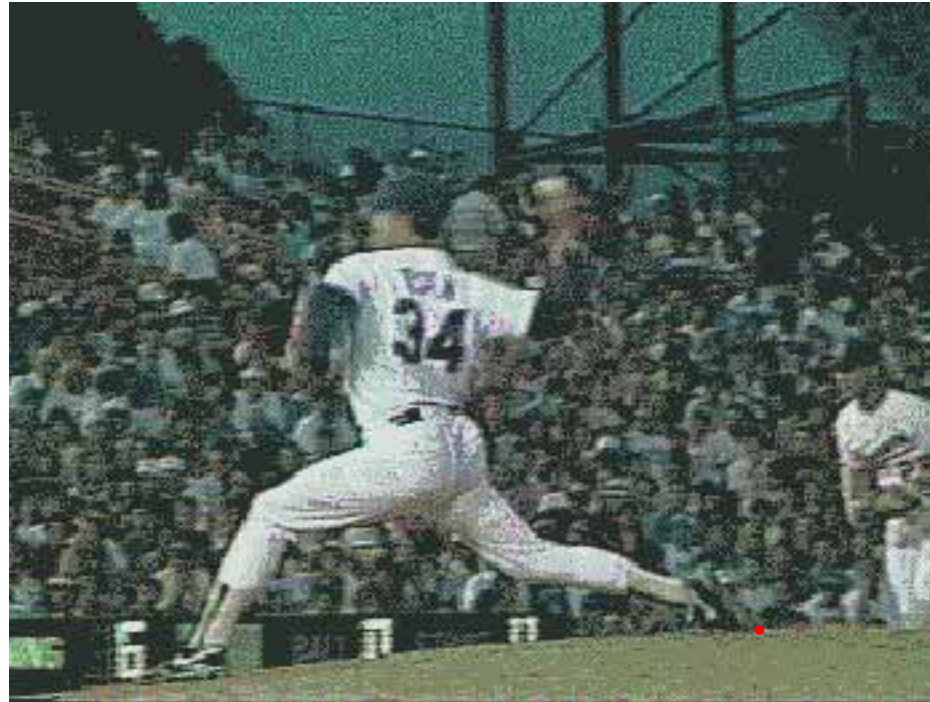
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PAS Forearm Vertical: As you would expect, Nolan Ryan has near-perfect timing. At the moment his PAS forearm is vertical, his GS foot has just planted and his shoulders are just starting to turn. Notice how Nolan Ryan's PAS elbow is 6 or so inches below the level of his shoulders at this moment. His elbow is bent roughly 80 degrees. Notice how Nolan Ryan's hips are rotating roughly 75 degrees ahead of his shoulders.

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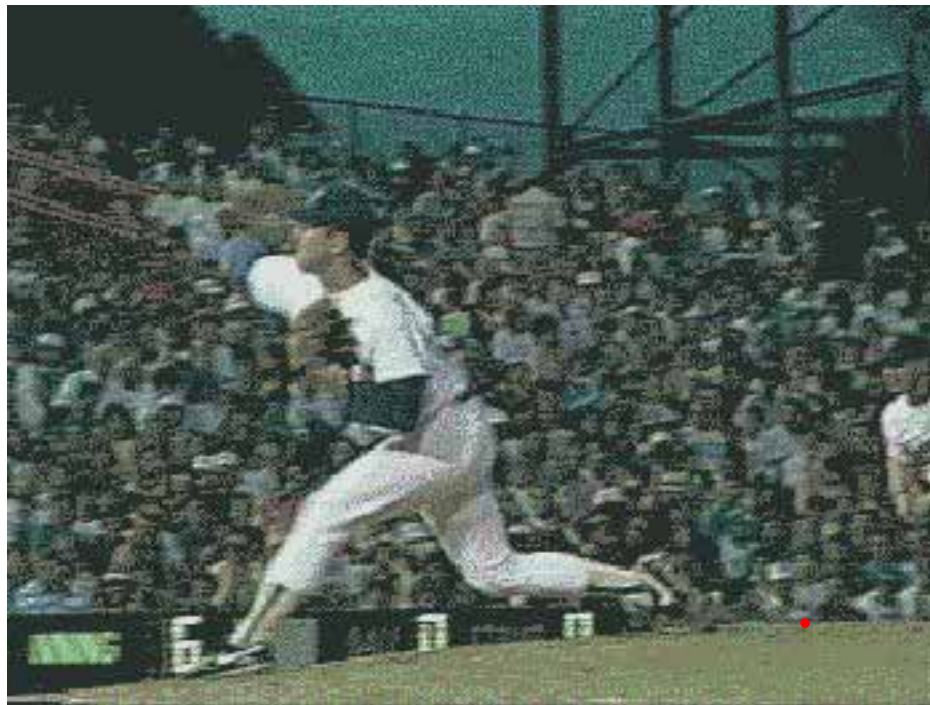


Nolan Ryan's PAS upper arm is externally rotating, and his PAS forearm is "laying" or "bouncing" back, as his shoulders rapidly rotate. His PAS elbow is bent between 45 and 60 degrees as this is happening. Also, Nolan Ryan isn't pushing off of his PAS foot at this moment. Instead, his PAS foot is being pulled off the rubber by the rotation of his hips.

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In this frame, Nolan Ryan's shoulders have pretty much stopped rotating. This is causing his PAS elbow to rapidly extend.

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Release Point: Notice how Nolan Ryan doesn't leave his PAS foot behind on the rubber (the red dot). Instead, his PAS foot comes off the rubber (the green dot) roughly 18 inches. This maximizes the rate with which, and distance over which, his hips rotate. One thing to notice is how steady Nolan Ryan's head is through the Release Point.

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