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ing from the scanning motion of the cantilever relative to said position detector.

- 7. An atomic force microscope, comprising:
 - a scanning mechanism comprising at least one scanning tube;
 - a light source;
 - a cantilever moved by said scanning mechanism so that the cantilever may be scanned over a sample;
 - an optical assembly comprising at least one steering lens mounted in the interior of said at least one scanning

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tube to guide a light beam emitted from said light source on said cantilever and to follow substantially a fixed point on said cantilever during movement of said scanning mechanism; and
a position detector which receives a reflected light beam from said cantilever and detects a deflection of said cantilever.

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