

Abstract Submitted
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Gas and Stellar Kinematics in the Galaxy NGC 1961 BRIAN SACASH, JASON PINKNEY, Ohio Northern University — Long-slit spectroscopy and CCD imaging from the Hubble Space Telescope and the MDM Observatory is presented for the massive spiral galaxy NGC 1961. We intend to measure the mass of the central supermassive black hole (SMBH). We developed our own software for spectral extraction, and for the fitting of absorption and emission lines. The program subtracts the absorption-line (stellar) portion from the emission-line spectra using a shifted template star. This improves the measurements of the residual emission lines. We present our measurements of the line centroids (velocities), widths (velocity dispersions), and strengths for the most prominent emission lines ($H\alpha$, [NII], and [SII]). The rotation curve from the ground-based data is in good agreement with previous work by Rubin (1979); its asymmetric appearance suggests a possible merger. The emission lines near the nucleus broaden indicating some intrinsic dispersion. The central gas rotation curve at HST resolution is more complex than that expected for a cold, gas disk, confounding the measurement of a central black hole.

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