Abstract Submitted
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The diagnosing of plasmas using spectroscopy and imaging on Proto-MPEX[1] K.A. BALDWIN, Windsor Central High School, T.M. BIEWER, Oak Ridge National Lab., J. CROUSE POWERS, Laurens Central School, R. HARDIN, Corinth High School, S. JOHNSON, Nelsonville-York High School, A. MCCLEESE, Clay High School, G.C. SHAW, M. SHOWERS, Univ. of Tennessee, Knoxville, C. SKEEN, Oak Ridge High School — The Prototype Material Plasma Exposure eXperiment (Proto-MPEX) is a linear plasma device being developed at Oak Ridge National Laboratory (ORNL). This machine plans to study plasma-material interaction (PMI) physics relevant to future fusion reactors. We tested and learned to use tools of spectroscopy and imaging. These tools consist of a spectrometer, a high speed camera, an infrared camera, and a thermocouple. The spectrometer measures the color of the light from the plasma and its intensity. We also used a high speed camera to see how the magnetic field acts on the plasma, and how it is heated to the fourth state of matter. The thermocouples measure the temperature of the objects they are placed against, which in this case are the end plates of the machine. We also used the infrared camera to see the heat pattern of the plasma on the end plates. Data from these instruments will be shown.

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