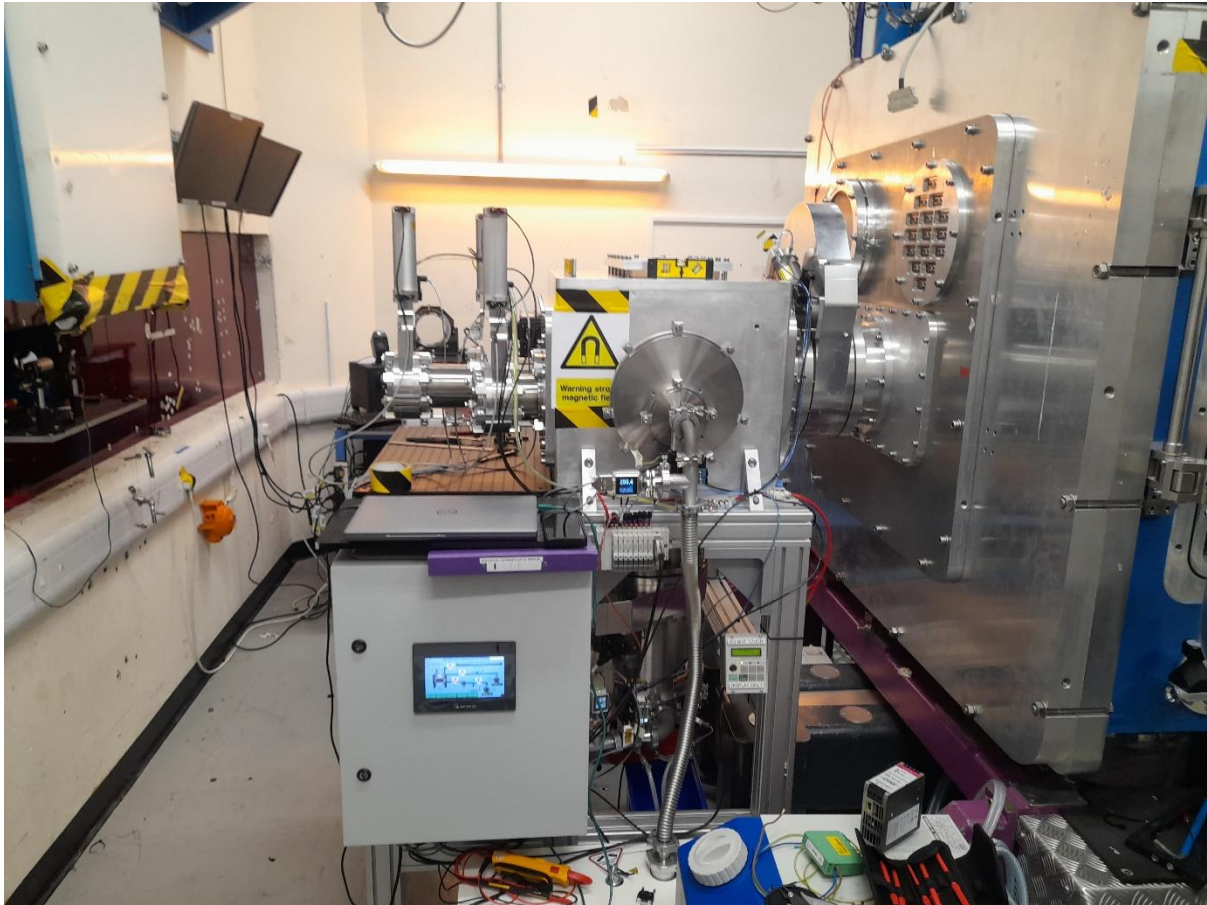


Full Automation of Thompson Chamber for Gemini Experiments

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A new, fully automated vacuum chamber for Thompson plates has been constructed for experiments in Gemini with an integrated automatic vacuum control system and interface.

The system features an HMI giving users the ability to start and stop fully automated pump downs, let up as well as open the gate valve between the Thompson chamber and the main chamber to take shots. The gate valve is interlocked by measuring the pressure differential in both chambers thus preventing users from opening the gate valve in the wrong conditions which would potentially cause damage to expensive vacuum equipment such as the turbo pumps.

The system also features a chamber pressure evaluation in the pump down sequence that provides time saving for the users during pump downs if the chamber has not been fully let up.

The chamber achieved an excellent vacuum of 7.72×10^{-7} mBar during testing and was recently used in the Borghesi grazing shot experiment where three MCP mounts at 0° , 5° and 10° incidence to the target were used as the main diagnostics.

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