Cornell University
Cornell High Energy Synchrotron Source

SRCCS 2015

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Summer Research for Community College Students – 2015

Building a Crookes Tube

Motivation

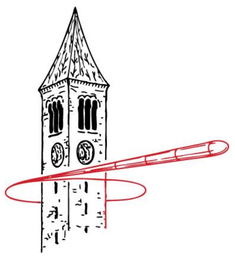
Make a display for either visitors to the college or to bring along on outreach activities (or both).

Goals

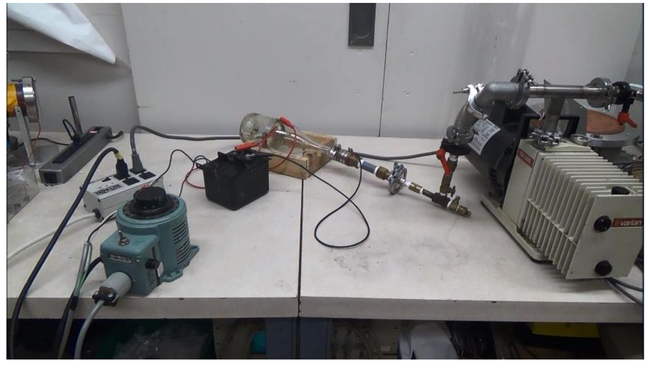
- Get something to happen
- make it safe
- make it portable
- make a tube with a permanent vacuum

Background Information

Crookes Tubes were first developed around the 1870's by William Crookes. Crookes Tubes led to several important discoveries like: the direction of current flow, electrons, and x-rays. Crookes Tubes also led to the eventual development of CRT's which were used in early x-ray machines, and TV's, among other things.

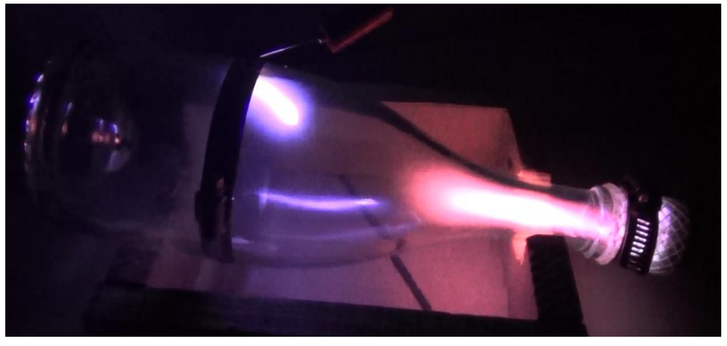


The setup

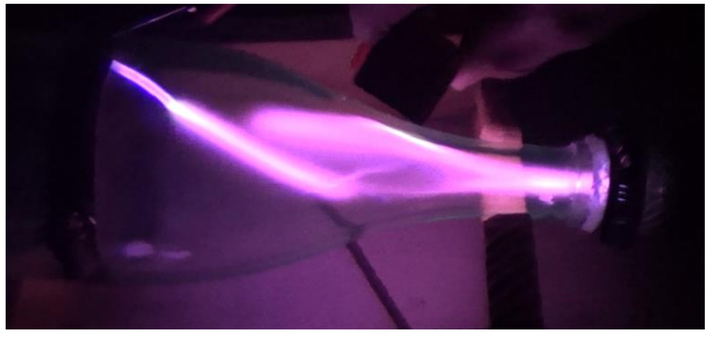


Near Crookes Tube

More air added



Solid beam bent by magnet



Results/Application

- Got something to happen!
- safety improved, slightly
- couldn't get it to work on DC power, and portability wasn't improved

With a few adjustments, the display could be used in the Exploration Station, and could possibly be used as a "bring along" for outreach events, but it is not ready for the Physics Bus.

Acknowledgements

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