



## Concept:

This is a vivid demonstration of the transmission and focusing of electromagnetic radiation. A heated wire located at the focus of one parabolic reflector emits radiation that is collected on a match head located at the focus of a second parabolic reflector. The infrared radiation (heat) absorbed by the match is eventually sufficient to ignite the match.

## Equipment:

- Demo Cart
- (6) C-Clamps
- Long Black Platform
- (2) Small Support Stands
- (2) Parabolic Dishes
- Match Holder
- Heating Coil Holder
- Box of Matches
- Variac Power Supply

## Procedure:

1. Verify that the support stands are clamped to the ends of the black platform, the parabolic dishes are lined up directly facing each other, and that the Variac power supply is plugged in to the outlet and heating coil and set at 15 volts. (**Do not turn the power supply beyond 15 volts as the coil may explode.**)
2. Turn on the power supply and notice that the coil glows red as it heats up.
3. Place a match in the match holder of the other parabolic dish.
4. If everything is lined up correctly and both the heating coil and match are at the focus of the parabolic dishes then the match should ignite in less than one minute.