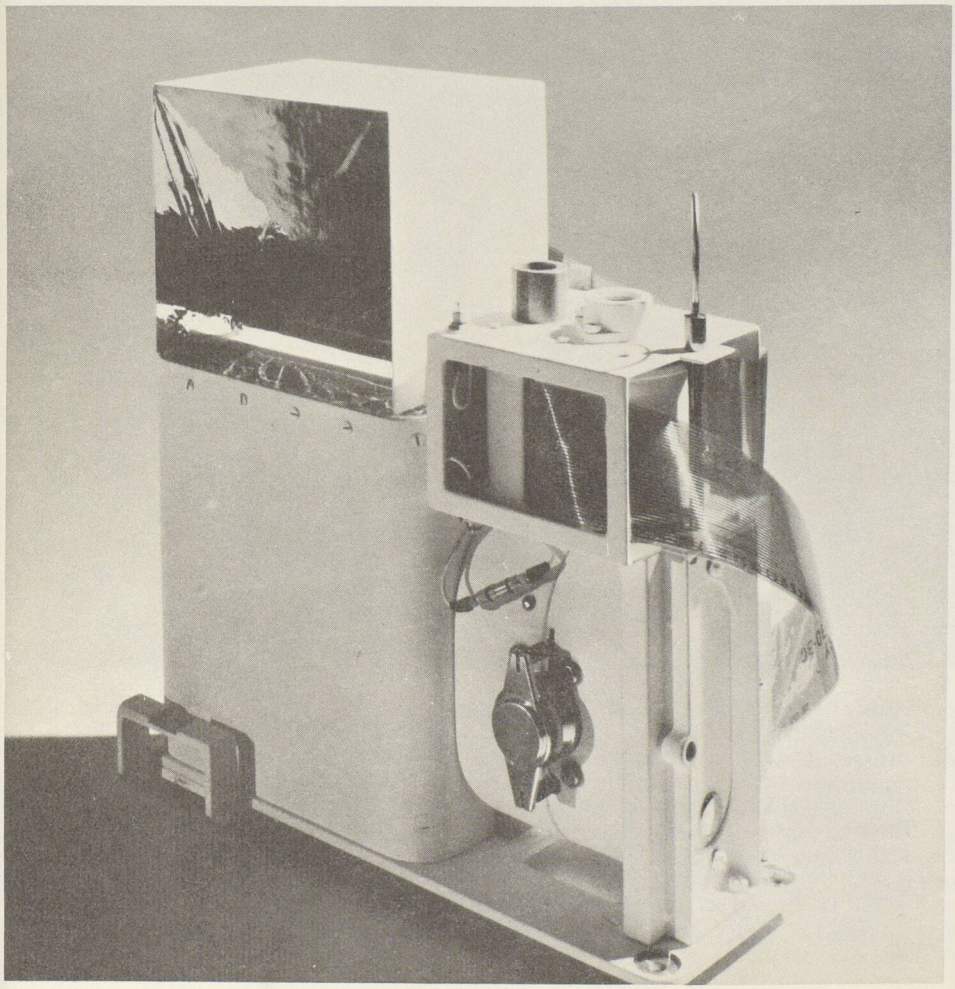
Instrument based on Canadian design
placed on moon by Apollo 12

The major experimental task of the Apollo 12 astronauts was the successful deploying of ALSEP (Apollo Lunar Surface Experiments Package) on the surface of the Moon. The package consists of a variety of instruments including a magnetometer, a seismograph, a suprathermal-ion detector, a magnetron gauge and an instrument for a solar wind experiment. They are powered by a single generator and are hooked to a central telemetry station which is transmitting to receiving stations on earth the information they are gathering on the lunar environment, particularly the physics and chemistry of the moon's surface, along with measurement of its magnetic field.

The suprathermal-ion detector (SIDE) and the magnetron gauge in a sense are companion instruments although they perform two different jobs. The detector is located some 55 feet from the central telemetry station and about 80 feet from the magnetometer because it contains a magnet with a strong magnetic field which might interfere with the magnetometer. It stands on a mat of wire mesh in order to prevent any magnetic or electric field emanating from the moon interfering with its performance.

The detector is measuring ions that are believed to compose a low-lying ionosphere just above the moon's surface. The astronauts aligned a slit at the top of this instrument with the ecliptic – the path of the sun – because in that position the instrument's delicate sensors will be least exposed to the heat of the sun.

The magnetron gauge, sometimes called a cold cathode gauge, also is located on the mat of wire mesh on which the ion detector rests. This instrument which the astronauts have dubbed "Sidekick", is about four feet from the detector to which it is connected by a round cable. ⟶



The magnetron gauge (lower right) formed part of the suprathermal-ion detector package until it was placed on the surface of the moon. It was removed from the package and placed about four ⟵ feet from the detector.

La jauge magnétronique (en bas, à droite) faisait partie du détecteur d'ions suprathermiques jusqu'au moment où elle a été déposée sur le sol lunaire à quatre pieds environ du détecteur.

The three main components of the magnetron gauge. Left – the spark-plug-like gauge seated in oval-shaped magnet. Right – the gauge and magnet seated in magnetic shield. ⟶

Les trois principales composantes de la jauge magnétronique: à gauche, la jauge dans son aimant ovale; à droite, la jauge et l'aimant dans le blindage magnétique.