source of this unexplained static, they discovered pigeons in their huge horn-shaped receiving device. The pigeons and their litter were removed, but the unexplained static persisted. Nothing had changed!

The scientists continued to look for the cause of their problem and startled the scientific world with their results. They observed that the Earth is bathed in a diffuse glow of cosmic radiation. This faint glow does not come from the Sun, the Moon, or any single star. The entire Universe seems to be the source.

The cosmic radiation measured by the Bell Lab's scientists is in the form of invisible microwave radiation. This microwave radiation is thought to emanate from the dying ashes of the initial fire of creation. It indicates that the entire Universe was fiery hot and filled with light many billions of years ago.

We can visualize this scientific extrapolation back into time by observing the dying coals in our fireplaces. Red-hot coals indicate that the fire burned very recently. As time passes, the coals become progressively duller in color. From the flames of the initial fire until the coals lose their color, we are detecting heat radiation as visible light. Even after the coals have ceased to glow, we can still detect heat radiation by passing our hand over the ashes. The heat we feel radiating from the ashes is called infrared rather than visible radiation.

If we shift from the ashes in our fireplaces to the ashes of the Universe's creation 15 billion years ago, the ashes are very, very cold. They no longer emit infrared radiation, but they still emit radiation in the form of microwaves which can be detected by sensitive instruments.

FIGURE 1.6.
Dr. Robert Wilson, *left*, and Dr. Arno Penzias, 1978 Nobel Prize recipients, accidentally discovered the Universe's cosmic background radiation while searching for the cause of static in the Bell Lab receiver. This cosmic radiation is strong evidence that the Universe began in an explosive blaze of light.