Gerald Wasserburg, the Colomera meteorite, and Hermogenes Sanz.

VISITOR FROM OUTER SPACE

A 290-pound meteorite from outer space arrived at Caltech last month, via Spain, for a ten-month period of research. The object of the research is the 4.6 million-year-old iron Colomera meteorite discovered near Granada, Spain, in 1912 and taken to the National Museum of Natural Science in Madrid. There it remained until last December when the museum permitted it to be shipped to Pasadena, via air freight, to be studied for information it can reveal about its formation and possible alteration.

Caltech's Gerald Wasserburg, professor of geology and geophysics, Donald Burnett, assistant professor of nuclear geochemistry, and Hermogenes Sanz of the Spanish National Commission for Space Research and the Spanish Atomic Agency will conduct the research in a project supported by the National Science Foundation and NASA.

When the Caltech team of Burnett and Wasserburg was doing research on a number of iron meteorites last year, Dr. Wasserburg visited the National Museum of Science in Washington, D.C., where he found a small piece of Colomera that the museum has owned for a number of years. Dr. Wasserburg requested and received pieces of it for study in his Caltech laboratory. He and Dr. Burnett found that their analyses of Colomera did not fall into the regular pattern that other iron meteorite analyses did—a pattern which usually makes it possible to calculate the time of a meteorite's formation.

Because of the unusual nature of the Colomera results, the men wanted an opportunity to dig deep inside the meteorite body and to compare analyses with those they had made from the outer fragments. The techniques for carrying out this type of experiment exist in only a few places in the world.

The Caltech men will slice the meteorite, taking sample crystals of silicate from it. The initial experiments will investigate the isotopes of rubidium and strontium using a new computerized mass spectrometer developed by Dr. Wasserburg, which will determine the exact balance between radioactive rubidium-87 and its strontium-87 daughter. This information will indicate conclusively whether this meteorite has experienced serious alteration since its formation. Such alteration could be caused by heating or by collision of the meteorite with other objects in space prior to falling on the earth.

When the experiments are finished in about eight months, Dr. Sanz will return to Spain with the main mass of the meteorite. Then Colomera will again take up residence in the National Museum, having played an important role in the acquisition of knowledge about the creation of our solar system.