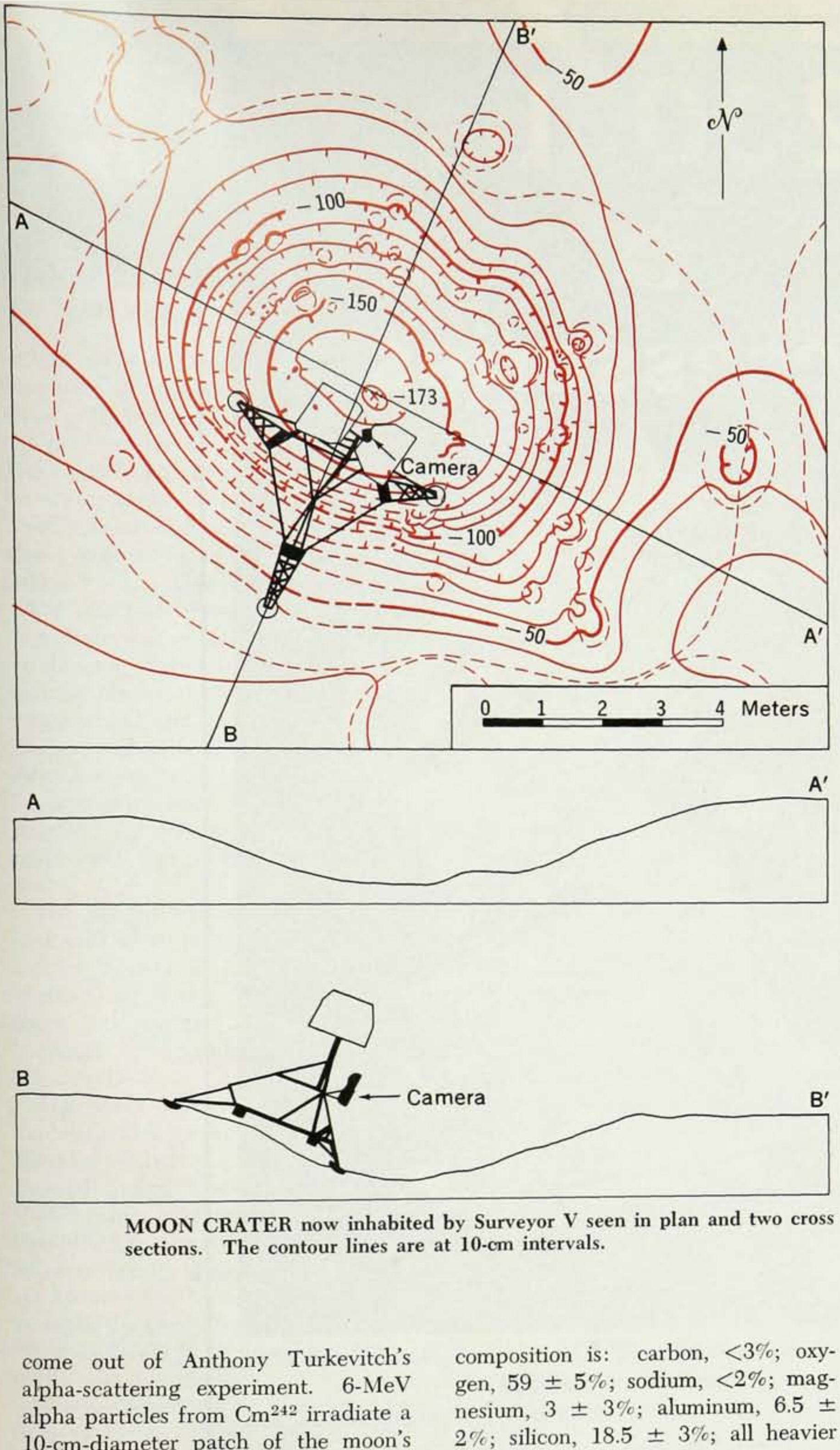

MOON CRATER now inhabited by Surveyor V seen in plan and two cross sections. The contour lines are at 10-cm intervals.

come out of Anthony Turkevitch's alpha-scattering experiment. 6-MeV alpha particles from Cm^{242} irradiate a 10-cm-diameter patch of the moon's surface and the energy of back-scattered alphas is measured by two detectors; there are proton detectors as well to monitor α,p reactions in the surface material. Characteristic alpha and proton energies enable a chemical analysis of this material to be made in terms of the relative atomic abundance of elements present. A disadvantage is that hydrogen cannot be detected.

Preliminary results show that the composition is: carbon, <3%; oxygen, 59 ± 5%; sodium, <2%; magnesium, 3 ± 3%; aluminum, 6.5 ± 2%; silicon, 18.5 ± 3%; all heavier elements, 13 ± 3%.

This composition has been compared with terrestrial and extraterrestrial rocks; it agrees closely with common alkali basalt, the material that on earth appears as volcanic flow to the surface from the subcrust. It is clear from this analysis that differentiation (separation between crust and core) of the elements has occurred during complete or partial melting of the moon, which is therefore not in the pristine condition hoped for by some selenologists; their expectation that the moon could be used as a museum specimen to demonstrate the composition of the earth at its formation has not been fulfilled.

Dubna Scientists Report Discovery of Element 105

G. N. Flerov, director of the Dubna Laboratory for Nuclear Reactions, recently reported the discovery of element 105. At the Tokyo Nuclear Structure meeting in September, Flerov said that Dubna physicists had bombarded Am^{242} with Ne^{22} from the 300-cm cyclotron and produced either isotope 261 or 262 (they are not sure which one). The new isotope had a half-life of less than 0.1 sec and an alpha energy of 9.45 ± 0.15 MeV.

By the end of the year Flerov expects that modification of the 150-cm cyclotron will be complete; it will produce 15–20 MeV/nucleon. Then Dubna physicists will start looking for elements 114 and 126, both generally expected to be stable. Heavy-ion experts say the Russians may well be first to succeed since they will have at least a two-year headstart.

Bohr Institute Still Studies The Quantum and the Nucleus

The Niels Bohr Institute in Copenhagen is bigger today than it used to be when it was the Institute for Theoretical Physics. The name changed in 1965, when the founder's name was added, but the program remains about the same as it was in earlier days. The word "theoretical" was meant to mean "basic" as opposed to "applied," and its disappearance implies no change.

As always the institute concerns itself with a variety of aspects of quantum physics. Since Niels Bohr made his contributions to the understanding of compound-nucleus reactions and fission in the 1930's, there has been considerable emphasis on nuclear quantum phenomena. Much of it is experimental, which takes a large share of running and capital costs.

Atmosphere. As in former times the organization plays a large role as a meeting place for scientists from many