register such particles. But if the axis of the transducer is perpendicular to the magnetic line of force, then the encountered stream of particles is very intense. This means that the recorded corpuscles "spend their lifetime" at high altitudes in the tenuous layers of the atmosphere where there is no absorption.

These particles are said to have been trapped by the Earth's magnetic field. But at the time of northern lights a tremendous amount of new corpuscles appear in the magnetosphere. The ability of the magnetic field to retain charged particles is diminished. At the same time the density of the atmosphere at great heights is increased. All this leads to a stronger absorption of geoactive particles by the atmosphere. Their stream from above downwards becomes, in fact, much greater than in the reverse direction. These cases can be detected by comparing the recordings of the transducers facing in the opposite directions. The data that have been analysed to this day show that at lower latitudes the magnetic trap in most cases is not destroyed. This suggests that corpuscular streams do not enter the denser layers of the atmosphere.

To study streams consisting of the softest corpuscles, the sputniks Cosmos 3 and Cosmos 5 carry special magnetic traps for the analysis of soft-ion energies.

Geiger Counter

The sputnik instrumentation also includes a standard Geiger counter with a 3-mm. lead shield. This makes it possible to compare the intensities of soft geoactive corpuscles and electrons and ions of very high energies forming radiation belts around the Earth. At high altitudes in the radiation belts the counting rate of this instrument is greatly increased. Above the Brazilian magnetic anomaly high count rates are recorded not only at considerable heights, but also at relatively small altitudes of the order of 200 to 400 kilometres. The intensive streams of low-energy corpuscles are often observed where the intensity of particles making up the radiation belts is small.

The continued operation of the sputniks inevitably calls for control and calibration of measuring instruments in the course of flight. To keep continuous watch over the functioning of the involved automatic gauges, regular check-ups are carried out in the sputnik on the power supply voltage, the work of particular units, the physical conditions in the hermetically sealed compartment and conditions on the surface of the sputnik. The analysis of these data has revealed a high degree of stability in all systems of the sputnik.

The sensitivity of the electron transducers during flight is controlled by means of a radioactive standard containing a hydrogen isotope—tritium. During measurements a stream of electrons emitted due to the radioactive decay of the tritium is not hitting the screen and so does not interfere with the measurement of geoactive corpuscles. But a special generator, which is switched on and off automatically, at regular intervals applies high voltage to the standard. The trajectory of electrons emitted by the standard becomes curved in such a way that the exposure of the screen becomes significant. Since the rate of radioactive decay of tritium is known and remains practically unaffected during the sputnik's functioning, such a procedure enables periodic check-ups to be made of the sensitivity of the electron transducers.

A great deal of information received from the sputniks Cosmos 3 and Cosmos 5 is still in the process of deciphering. The observations continue.

UNIVERSITY DEVELOPMENT IN INDIA (A STATISTICAL REPORT, 1961-62)

WE have received a copy of the report prepared by the Statistical Section of the University Grants Commission, Rafi Marg, New Delhi-1, priced Rs. 3·50 nP. or 5 *sh.* It provides a useful and convenient summary of the latest facts and figures about the Indian Universities, and will be of value to all concerned in the development of higher education in India.

There are 53 universities in India of various types distributed among the 16 States (including Delhi), which means that there is one university for every 8·34 millions of population. The total number of colleges is 1,783 of which 107 are university colleges, 1,223 are private colleges and 453 Government colleges Of the 1,783 colleges 1,194 are Arts, Science and Commerce colleges and 589 are professional colleges.

The total number of students enrolled during 1961-62 was 980,380 of which 169,627 were women.
