

able sophistication is going to be hard to hit. The decisions are as much political as military and scientific, and the nuclear issue is most certainly not going to be brought forward at the next election. At a nadir of public interest in the East-West military situation, one can only hope that the right decisions are being taken behind the scenes.

ASTRONOMY

Galaxy Unveiled

by our Astronomy Correspondent

Edinburgh, Tuesday

A NEW instrument which Professor H. Brück, the Astronomer Royal for Scotland, says will start a new era in optical astronomy was on show at the Royal Observatory, Edinburgh, today. Called the Galaxy machine, the instrument has already begun to speed up by orders of magnitude the reduction of data from photographic plates. Above all, Professor Brück says, the machine means that the capabilities of Schmidt telescopes can at last be fully exploited. This is the telescope favoured by astronomers for general surveys of the sky, and the 16-inch Schmidt at Edinburgh can cover an area of sky of about 4 degrees across in a single exposure of a few minutes. But the task of finding positions and brightnesses of only a fraction of the star on the plate would require an army of assistants prepared to do what is a tedious and painstaking job. This is the task that Galaxy—a roughly constructed acronym for General Automatic Luminosity and XY—is designed to carry out. A measure of how useful Galaxy is going to be was given by a delighted Dr V. A. Reddish at the observatory. This morning the first astronomical results went through the machine, and in an analysis of 25,000 stars on a plate of a region in Perseus, the machine helped astronomers to find 1,103 stars less than 2.8 million years old. Previously only fifteen stars in that category were known in the region.

Galaxy works by first scanning the plate with a spot of light to record the positions of images. In this phase of the operation, images are recorded at a rate of 10,000 per hour, with a positional accuracy on the plate of 10 microns. Then the output tape from the search phase is used as the input to the next part of the operation. The process narrows down to each image in turn which is examined with a spiral scan. At a rate of 900 images per hour, this gives the position to half a micron and the size of the image (which is a measure of brightness) to one-fifth of a micron. The nearest competitors seem to be at Lick Observatory and at the US Naval Observatory, which have machines to centre the image automatically, but the images have to be brought to the cross wires by hand and are therefore much slower.

With the machine now working, the firm responsible for its construction, Faul Coradi Scotland Ltd, hopes that the "many enquiries" which have been received about the machine can be gone into seriously. Faul Coradi is a relative of the Ferranti company where work on Galaxy began. An order from the Royal Greenwich Observatory, for delivery in 1971, is said to be imminent. Clearly wherever Schmidt telescopes are used—and a 48-inch Schmidt is believed to have been decided on as the British facility to be built alongside

the Anglo-Australian telescope—there is a potential market for the machine. Professor Brück is also optimistic that Galaxy will be valuable in other disciplines. There is to be a meeting of professors from the science faculties of the University of Edinburgh during the next few days to make known the capabilities of the machine. Prospective buyers might like to know that the selling price is expected to be about £110,000.

INDUSTRIAL CONSULTANCY

Another Centre at Edinburgh

THE University of Edinburgh has taken a leaf out of the report of its own Vice-Chancellor, Professor Michael Swann, by setting up a new Centre for Industrial Consultancy and Liaison. In the report *The Flow into Employment of Scientists, Engineers and Technologists*, Professor Swann argued that there should be closer links between industry and the universities, and this is just what the new centre intends to create. It will be a "middle man" between the university and industry, selling research and expertise to industrial firms. It aims to promote consultancy by the university staff by putting firms in touch with individuals likely to be able to advise them, to promote contract research in university departments and to facilitate the secondment of industrial staff to work in the university. It also hopes to encourage members of the university staff to take on collaborative research and development work with industry and to promote time sharing of specialized university equipment and facilities.

The centre has received a grant of £27,000 from the University Grants Committee, spread over three years, and the university is providing accommodation and normal running expenses. But it is hoped that the centre will eventually earn enough money from fees and from spin-off companies backed by the university to be able to pay for itself. The centre is run by a management board, responsible to the University Court, and its director is Dr John Midgley, a physicist who has spent thirteen years working in industry. Similar centres have been set up at other universities during the past few years, but Dr Midgley claims that the Edinburgh centre is the only one engaged in selling university research in all fields to industry. Many others concentrate on a particular field, and the largest centre—the Centre for Industrial Innovation at the University of Strathclyde—has its own laboratories in which it develops prototypes and new processes under contract to industrial firms.

COMPUTER INDUSTRY

IBM climbs to a Plateau

THE fall in the value of IBM shares on the New York Stock Exchange after the announcement last week of diminished earnings in the last quarter of 1969 has seemed to many people in the business to be a reminder that even giants are mortal. In reality, however, there seems no doubt that the company's misfortune is something of an illusion. The chairman of the company, Mr Thomas J. Watson, jun., has been saying for more than a year that income in 1968 was inflated by a large amount of computer leasing business which fell in that year. What seems to have been a surprise, however, is the way in which the turnover of the