

ses the plates were measured at ESO-Geneva and the orbits were computed by Dr. B. Marsden, Smithsonian Observatory, Cambridge, Massachusetts, USA.

H.-E. Schuster and R. M. West will start using the ESO 40 cm astrograph from October 1976. By using sensitized photographic plates they hope to be able to observe all but the faintest of these asteroids, which must still—if possible—be observed with the Schmidt telescope.

3. Asteroids Recovered

It frequently happens that a minor planet is so far south that it cannot be observed with telescopes in the northern hemisphere. If, moreover, the planet is on the "critical" list, i.e. its orbit is not accurately known and it may therefore get lost, observations by southern telescopes become urgent. The ESO 1 m Schmidt telescope is one of the most efficient southern telescopes for such work and during the past year, several "critical" observations have been made. For instance, a valuable observation was made on June 12, 1976, at declination $-58^{\circ}5'$, of Apollo-type asteroid (1580) Betulia, when it was rapidly receding from Earth after the close encounter (19.5 million km) on May 23, 1976. On the night of the ESO observation it was already at distance 53.4 million km and of magnitude 15.

In order to improve the possibilities for following up the discoveries of new asteroids (and making urgent observations of already known ones), ESO astronomers A. B. Muller,

4. Why Observe Minor Planets?

Some people may well ask why astronomers still observe minor planets. With over 2,000 known, what do a few more or less matter? They will probably agree that a thorough knowledge of asteroid orbits may be useful when their great-grandchildren make the trip to the Jupiter-Ganymede base. But even now the minor planets are important enough to justify continued observations. Their orbits outline the gravitational field of the solar system and their distribution speaks of events in its early history. The physical study of asteroids shows us early solar-system matter, and a soft landing on a suitable asteroid is quite possible within the next decade. As a matter of fact, one of the top-candidates for this honour, Minor Planet 1976 AA, was discovered with the Schmidt telescope on Mount Palomar, California, in January 1976. So the Europeans, keep trying!

Instrumentation Plan for 3.6 m Telescope

A new and updated plan for the instrumentation of the 3.6 m telescope has been developed within ESO. The plan, which covers instrumentation developments for the period 1977–1980, was presented on May 12 by the Director-General to the Instrumentation Committee, which gave its unanimous support. The plan will be considered by Finance Committee and Council later this year.

A first step in the preparation of the instrumentation plan was a survey of the scientific programmes which the users of the ESO facilities wish to carry out and of the instrumental parameters they consider optimal. For this survey, questionnaires were sent to all persons who have used the La Silla facilities during the last five years. The response was very good with nearly half of the astronomers providing replies. Research plans cover a very wide range of subjects. Roughly one-third of the respondents wish to engage principally in extragalactic and nebular work. Most of the others are planning studies in stellar spectroscopy, especially at medium and high resolutions. Among the instrumental wishes, a rather high-dispersion Cassegrain spectrograph is at the top of the list. The use of efficient modern panoramic detectors is regarded as essential by many respondents.

Some instrumentations for the 3.6 m telescope is already under construction at present. Included are various correctors, a 4–6-channel photometer, a low-dispersion

spectrograph with attached image-dissector scanner and a vidicon for direct imaging.

In the instrumentation plan, several new developments are foreseen. Highest priority is given to a cross-dispersed Cassegrain echelle spectrograph and to a high-resolution coude spectrometer. The former should allow the observation of faint stars at reasonably high dispersions (5 Å/mm) when used in conjunction with a modern detector, and the latter observations of brighter objects at very high spectral resolution. Other spectrographs, including one for the near infrared, and a radial-velocity photometer are also being planned. The acquisition of a variety of the newer detectors forms an important element in the plan, since these detectors and the equipment needed for their effective use are essential both for direct imaging and for spectroscopy.

Infrared developments also are given much attention. A special top ring with wobbling secondary is foreseen for the telescope to make it reasonably "clean" in the infrared, and photometric and other accessory instruments are planned.