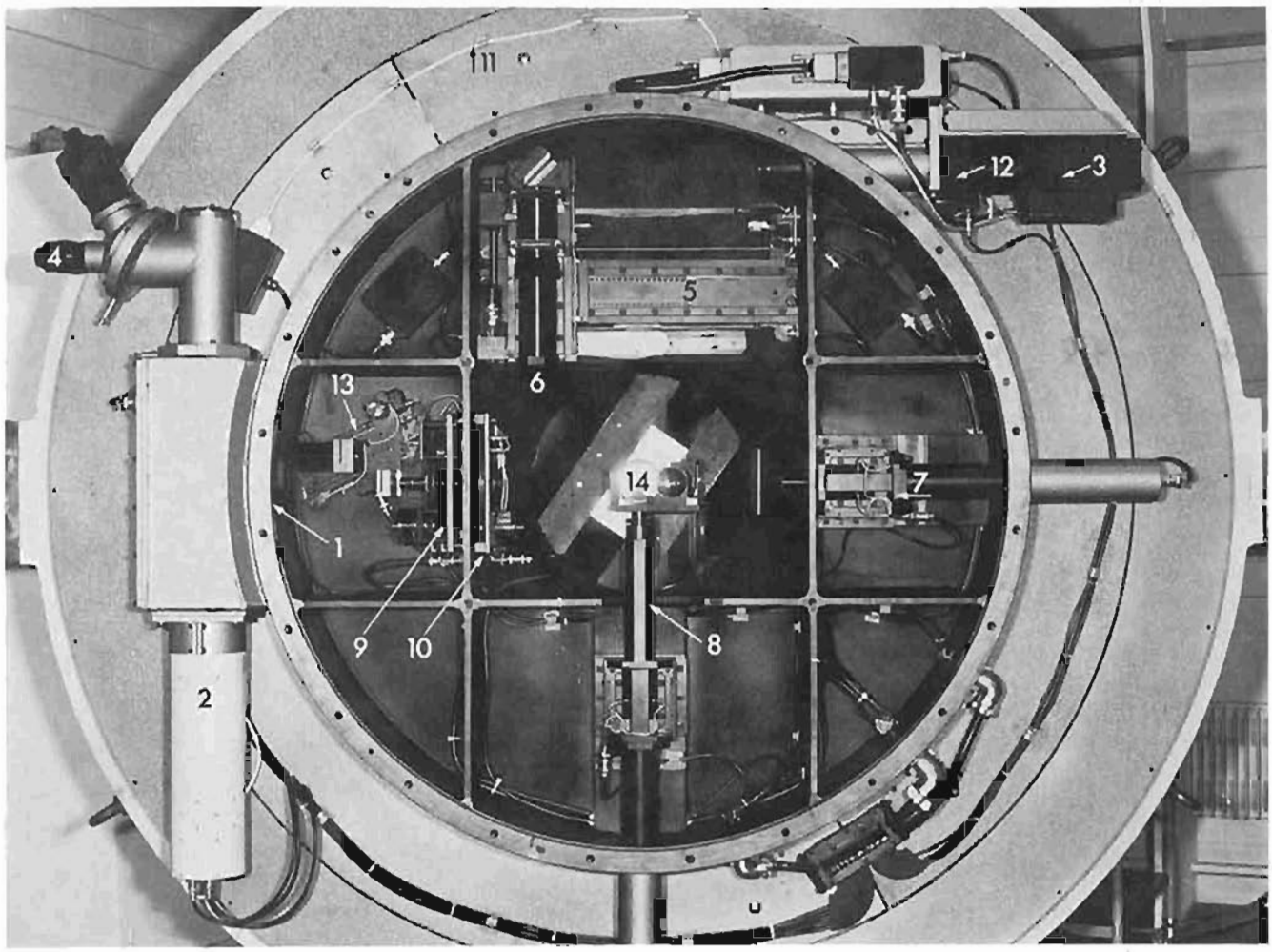

Fig. 3: *ADAPTER HOUSING WITH REMOVED REDUCTION PLATE. – (1) adapter housing, (2) TV camera for centrefield observation, (3) ISIT camera for guiding, (4) eye-pieces, (5) X-Y displacement table with guide probe, (6) guide probe, (7) centrefield mirror actuator, (8) slit viewing unit actuator, (9) turret for field lenses – cross-hair and knife edge, (10) turret for glass thickness compensation, (11) cable guide, (12) filter turret for ISIT camera, (13) carriage for small and large-field objectives, (14) star-simulation device for calibration of the adapter.*

The accuracy of the positioning will be 1/10 of a degree. The bottom face of the bearing is the connection flange for the adapter housing.

The *housing* contains the optical components and related actuating mechanisms as shown in Fig. 3. It is a welded cylindrical steel structure with a plain base plate and 4 strengthening ribs assuring sufficient stiffness to the structure, resulting in less than 5 μm distortion of any reference surfaces of the optical component actuating mechanism, when the housing is tilted from 0 to 45°.

The lower flange end is connected either to a large instrument, such as an echelle spectrograph, or to the *reduction plate* carrying the smaller instruments such as a spectrograph, photometer or camera. The X-Y displacement table positions the guide probe within the area of (308 x 149) mm^2 of the image field, 305 mm from the focal plane. As the adapter can be turned ± 182°, the complete field can be scanned by the guide probe. The X-Y displacement tables are guided in preloaded linear bearings and driven via "play-free" satellite roller screws by means of tachometer DC gear motors. The positions of the tables are given by rotating incremental optical encoders located on the end of the roller screws. The zero position (initialization) is given by a microswitch at the end of the stroke and the first zero pulse of the encoder. The reproducibility of the zero position is 4.2 μm. Within the scanning area the resolution for the guide-probe position is 1.4 μm, the reproducibility will be 5.6 μm and the total accuracy is better than ± 20 μm, deflection included. The time to move the guide probe across the field is 30 sec in X (308 mm) and 15 sec in the Y direction (149 mm). The cables for motors, switches and cross-hair illumination are collected in a cable guide on the side of the X displacement bed. When the adapter is controlled in a manual mode, from the control panel inside the Cassegrain cage, only the speed control feedback loop via the tachogenerator is closed and 2 speeds, fast and slow, are foreseen. The position feedback loop is closed via computer control. When the guide probe reaches its commanded position, the speed is regulated down by computer via a 12 bit D/A converter.

Two identical actuators support and position the centrefield mirror and slit viewing units in the field with a reproducibility of ±10 μm. The time for displacement (205 mm) from "out" to "in" position is 15 sec. The actuator consists of a ram guided by two recirculating linear bearings engaged in two opposing 90° grooves in the ram. The ram is moved by a screw nut system driven by a DC motor. The "in" and "out" positions of the ram are defined by two mechanical stop plates at the end of the stroke and these positions are indicated by microswitches. The drive motor is controlled by a power amplifier which has, in addition to the negative voltage feedback, a positive current feedback loop to give a negative impedance output characteristic. This is a substitute for tachometer feedback because of less severe requirements for speed stabilization. It functions in the following way: when the friction torque rises, the motor speed will try to go down. The loss of "back-EMF"

New CERN/ESO Telephone Number

As from March 18, 1977 CERN's general telephone number will change from 41 98 11 to 83 61 11.

It will then also be possible for people telephoning from outside CERN to dial the ESO extensions directly, by composing 83 followed by the present internal number. For example:

Scientific Group: (022) 83 50 90
Engineering Group: (022) 83 46 92
Instrumentation Development Group: (022): 83 48 31
Sky Atlas Laboratory: (022) 83 48 34
Geneva Administrative Group: (022) 83 48 38