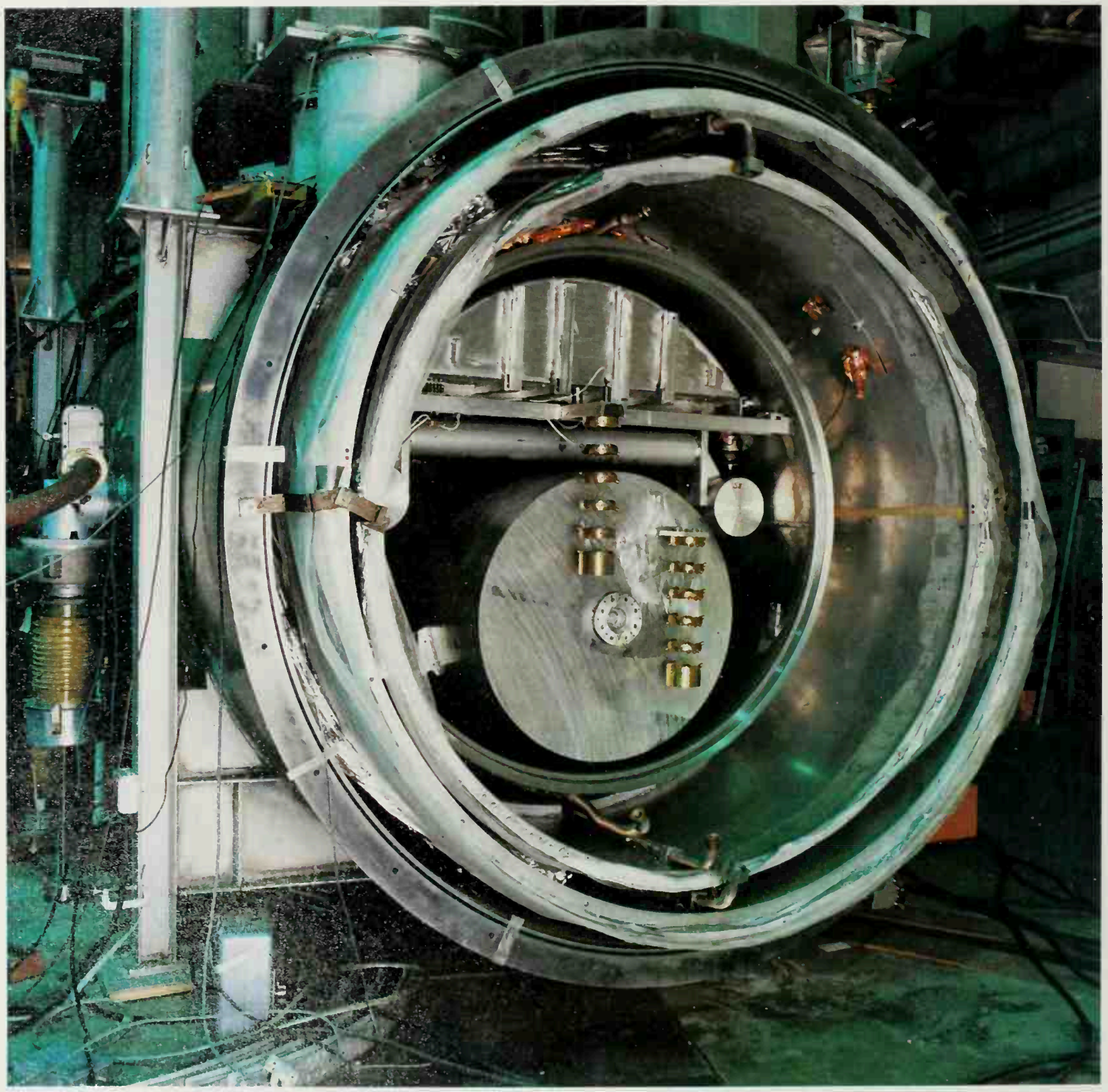
lite (IRAS) which carried out the first survey of the whole sky at infrared wavelengths, as well as examining specific objects.

An even more sophisticated spacecraft is scheduled to be launched at a later date to continue this work in an even more detailed manner. Infrared satellites have limited lifetimes due to the fact that their detectors (and parts of the structure) have to be cooled to low temperatures by the use of liquid helium, and this gradually boils away so that the supply becomes exhausted. The advent of the Space Shuttle should mean that these and other satellites can be either replenished or recovered, with a considerable saving in costs and a greatly extended working lifetime.

The Space Shuttle will be used in the launch of the Space Telescope. The size of its primary (2·4 m aperture), and the highly sophisticated auxiliary equipment which it is to carry, could well lead to an explosion of knowledge about all manner of astronomical objects. Free from the disturbing effects of the Earth's atmosphere it should achieve phenomenal resolution and possibly even be capable of directly detecting planets of other stellar systems, as well as detecting the faintest objects and reaching to the depths of space. But it will not be alone. Other satellites will be probing the universe throughout the electromagnetic spectrum from radio waves to gamma-rays, achieving a precision impossible from the surface of the Earth. Undoubtedly these will all add greatly to astronomical knowledge and, it is hoped, will help in obtaining solutions to some of the more perplexing problems facing astronomers today.



The large aluminium bar of the Stamford University gravitational wave detector is suspended in a chamber which is cooled to very low temperatures to increase its sensitivity.