

discovered to have rings. The occultation of a 9th magnitude star was noted from various observatories in Australia, South Africa, India and from the Kuiper airborne observatory. Apart from the occultation by the planetary disc there were 5 short occultations on either side of the planet indicating ring structure. The rings have now been observed directly by reducing the glare of the planet and observing in the infrared at 2.2μ .

When Voyager passes it we shall know more.

Booth 13/5/81
Chairman

Minutes of the Ordinary Meeting of the Cape Centre held at S.A.A.O. on wed 13th of May 1981 at 8 pm.

Present were the Chairman, Mrs Pat Booth, 19 members and 5 visitors.

Apologies for absence were received from Thesen, Orpen, Utley, Pureen, Larnmouth, Saville, Bondietti and Simanoff.

The talk was by Mr R. Wannacott, the subject: "Satellite Doppler Surveying, Techniques - the Basics and Applications."

Mr Wannacott began by explaining the principle of the Doppler Shift and how this principle is used to measure the frequency change as a satellite passes over the horizon emitting data on a particular frequency. He showed diagrams of the actual

satellites and explained how they operate. He then described the receivers used to pick up the satellites data and how they reduce the data to give a position fix. Aa application of this technique is the measurement of very long distances across the earth's surface with great accuracy. He also discussed the geodetic survey of South Africa. One of the present problems is that old triangulation work sometimes shows large discrepancies when broken down into primary, secondary and tertiary triangulation. Hence there is a need for re-measuring certain lines and re-fixing stations along and across southern Africa forming a "wine-glass" shape. With the new results obtained using the Doppler Satellite surveying techniques, some of these old problems are resolved.

Mr Wamacott concluded by mentioning a recent visit to the Antarctic where they carried out further experimental applications using Doppler Satellites.

Brook

Chairman 2/7/81