

Minutes of the ordinary meeting of the Cape Centre, A.S.S.A. held at S.A.A.O. at 20,00 hours on 12 September 1984.

Chairman: Mr C Turk

Attendance: 25 members and 2 visitors. Apologies for absence were received from Mr & Mrs M Kramer, Dr P Joubert, Messrs R Hurley and G Orpen.

Speaker: Dr F B Byrne of S.A.A.O. and Dunsink & Armagh Observatories in Ireland.

1. The meeting was opened by the Chairman who welcomed those present.
2. The minutes of the ordinary meeting held at S.A.A.O. on 13th June were read, confirmed and signed.
3. The Chairman explained that the increase of the Cape Centre subscription from R2-00 to R6-00 (with concessions to scholars, pensioners & couples) as approved at the A.G.M. of 8/8/84, was necessary to cover the cost of the "Cape Observer" of 4 issues per year at R1-00 each. He also mentioned that voluntary contributions could be made for the purchase of equipment for the Centre.
4. The Director of Observations, Mr M Soltynski then thanked Dr P Mack for the able manner in which he had performed his duty during 1983/84. He then outlined a number of astronomical events occurring during the next month and requested as many observations as possible of occultations of the moons of Jupiter so as to estimate the speed of light.
5. The Chairman introduced Dr. Byrne who addressed the meeting on "A New Look at the Sun"
6. Dr Byrne's studies of Flare stars had led him to a consideration of the atmosphere of the Sun and he presented
 - a) The old view of the Sun's atmosphere based on visible light.
The generally accepted model, up to about 10 years ago, was that the granulations seen on the photosphere were caused by convection currents below it's surface and these convection currents generated acoustic (or pressure) waves. These waves in turn provided the energy needed to raise the temperature of the Sun from 6000°K at the photosphere to $1\ 500\ 000^{\circ}\text{K}$ in the Corona. Other aspects such as the solar cycle and the solar wind were also discussed.
 - b) The latest model of the Sun's atmosphere based on X rays.
Skylab and the Solar Maximum (or minimum) Mission satellites (S.M.M.) were launched and positioned above the earth's atmosphere. These were equipped with telescopes having nested hyperbolic reflectors which enabled astronomers to analyse the resulting images and X ray spectra obtained from the Sun. These studies showed that the coronal loops had intense magnetic fields which were generated by the dynamo effect of the rotation of the sun and the convection currents below the photosphere. The heating of the corona is due to the release of energy from the distortion and fracturing of the magnetic loops in interaction with highly relativistic electrons and not to the postulated acoustic waves.
7. Dr Byrne was thanked by Mr J Churms for his lucid talk on the Sun, particularly since it was a long time since the Centre had had a talk on our nearest star.
8. The meeting was closed and tea was served at 21.30 hours.

Chairman *C Turk* date 1984 Oct 17