

## Transit of Venus—Goulburn's Location

The fixing of the longitude and the latitude of Goulburn, an historical event, took place with the observation of Venus on December 8, 1874, with the ultimate placing being determined in February, 1875. This was a most significant event in the history of Goulburn and historically very little prominence has been given to it. The minutes of the Municipal Council at a meeting in November, 1874, reveal that the Government astronomer of the day had applied to the council for permission to observe the transit of Venus from Belmore Park.

The government had promised to fix and erect an obelisk to mark the direction and location of the town. Whether this was done or not cannot be stated with any degree of certainty, but it appears more than likely it was not, as the present location of the plaque at the eastern side of Belmore Park was erected in 1910 when Mr Ashley was mayor. Also this perhaps is not the exact spot fixed in 1875, as our information shows quite a few seconds difference.

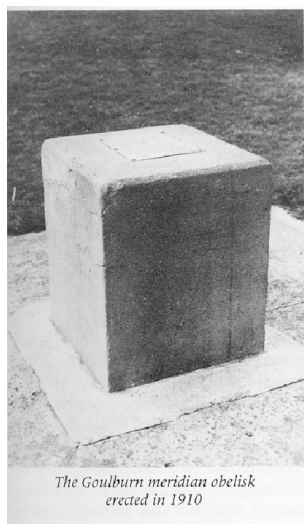
The council gave its permission in November, 1874, and a suitable site for the observation was fenced off to permit the placing of instruments by astronomers. The summer of 1874-1875 was one of the hottest ever recorded in Goulburn and this was to play its part in the observation. Much attention was given to the event and the Rev. Archdeacon Puddicombe gave a lecture in the Mechanics Institute the same evening on 'The Planetary System and the Phenomena of the Transit of Venus'

illustrated by Lantern Slides. The transit of Venus commenced at eight minutes to noon and continued until around 4.25 pm on December 9, 1874, conditions for observation were good for the transit of Venus across the face of the sun. The observations of ingress were accurately recorded by Captain Onslow, Professor Liversidge and Captain Hixon, who were the observers and Mr Tornaghi the photographer.

It is interesting to note that Mr A. Tornaghi erected Goulburn's Town Clock in 1881 and the large clock at the Goulburn jail in 1884. Owing to the extreme heat of the unusually hot weather the shaded glasses (smoked) and dark coloured glass attached to Captain Hixon's telescope were shattered causing an extreme hazard to the observer's eyes. The first interval was observed with the camera attached to a high powered telescope. In all, Mr Tornaghi secured some 74 photographs of the transit between the ingress and egress across the sun. Owing to the changed position of the sun, all the party were able to complete satisfactory observations and notes on the egress and final transit.

Captain Onslow and Mr Tornaghi returned to Sydney (probably the following day) Captain Hixon and Professor Liversidge remained in Goulburn to determine the true position of the town by the transit circle, which had been out of order for a few days in consequence of the very hot weather having disarranged the delicate cross wires of this precision instrument. Previous to his departure the instrument was repaired by Mr. Tornaghi. The two remaining observers awaited a fine starlight night and uninterrupted telegraphic communications with the Sydney Observatory to complete the precise position of Goulburn. Actually, the true position was not determined until February 1875, when as a result of the transit observations, Goulburn's position was fixed as latitude 34 degrees 45 minutes 13 seconds south; longitude 9 hours 58 minutes 47.18 seconds east.

It is most significant to note that the astronomical position reveals that the city is not laid out due north and south but beautifully laid out streets run considerably to the NE and SW. The present plaque in Belmore Park erected by the City Council in 1919 may not be on the identical site where the original observations were made, there is a difference of several minutes and seconds indicated on it. The essential figures on the plaque are as follows: Latitude 34 degrees, 47 minutes, 25.54 seconds south, Longitude 9 hours, 58 minutes, 53.27 seconds east, which can be readily observed are at some variance with the original finding on the 1874 observers.



The Goulburn meridian obelisk erected in 1910



The Meridian plaque inscription Latitude 34.45'25.54" S. Longitude 9 hours 58 minutes 53.27 seconds East