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CONFIRMATION OF THE PERIODICITY AND THE PERIOD (ABOUT 30 YEARS)
OF THE SHELL OF OMICRON ANDROMEDAE

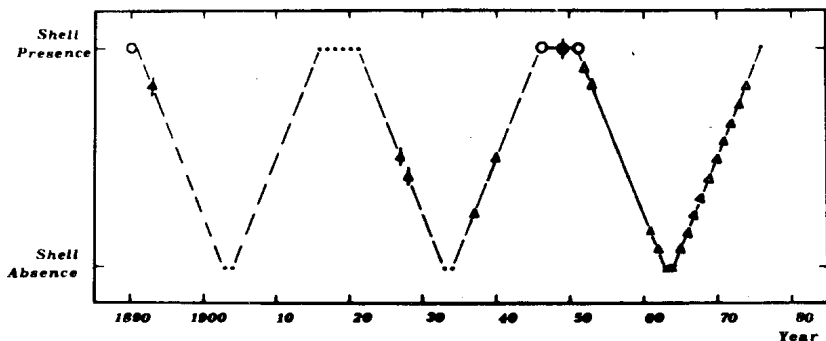
The reappearance of the new shell of \omicron And, reported in IAUC n. 2802, 2810, 2814, confirms the periodicity of the shell of \omicron And, and the period suggested by Schmidt (1959) and by Pasinetti (1967, 1968).

\omicron And was observed at Merate Observatory each year from 1961 to 1975. During this time, the Balmer lines showed sharp absorption cores, indicating a thin shell. The intensity of the cores and the number of Balmer lines in which they appeared, were variable; sometimes the cores appeared from $H\alpha$ to H_8 . In the years 1963, 1964 the hydrogen-absorption cores completely disappeared. The figure shows the situation of the shell (presence or absence) of \omicron And versus time. We constructed this graph with the simple assumption that the time interval (about 11-12 years) between the last presence of the shell spectrum (1951) and the complete disappearance of the hydrogen-absorption cores (1963), may be nearly equal to the time interval between the observed absence of cores and the reappearance of a new shell. Hence we suggest that the new large shell should reappear about in 1976.

The reported diagram has only a qualitative character, for the observational material at our disposal presence, intensity, number of the Balmer absorption cores does not allow us to construct an ordinate scale.

From the figure we can deduce that the shell of \omicron And has a period of about 30 years. Our diagram is similar to that reported by Schmidt (p.261, Fig.10); unfortunately this author does not explain the meaning of the ordinate scale of his graph.

Two spectrograms of \omicron And obtained on July 23.966 UT 1975 in the $H\alpha$ - $H\epsilon$ region with Zeiss prism-spectrograph (dispersion $35\frac{1}{2}$ Å/mm at $H\gamma$) of the 137 cm reflector, show: Balmer absorption cores



— Phase surely determined; · · · - - - - assumed periodicity; Δ B-type spectrum with sharp hydrogen absorption cores; X normal B-type spectrum, absence of Balmer cores; † B-type spectrum, the presence of the Balmer cores has not been reported in the literature; o shell spectrum: metallic absorption lines, sharp and deep Balmer absorption cores, emission at H α ; ‡ shell spectrum, no emission at H α .

similar to those observed in the preceding years (the cores visible in September 1974 are sharper and deeper than those observed in July 1975); H α has a weak absorption feature partly masked from the emission dispersion at H α \sim 200 $\text{\AA}/\text{mm}$; weak metallic absorption lines.

The probable duplicity of o And has not been confirmed by our diagrams of radial velocities (Galeotti and Pasinetti, 1968a, 1968b) obtained with the photoelectric period proposed by Schmidt (1959). No periodicity of radial velocities has been found also considering the period proposed by Olsen (1972). The duplicity of o And was questioned by Detre (1966) (see Pasinetti, 1968).

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