

Fig.2 : Scan of the spectrum of Nova Sagittarii 1977 in the ultraviolet and blue region

The spectrogram obtained on March 30 shows bright lines of hydrogen upto  $H_9$ , Fe II ( $\lambda\lambda$  4173-4296, 4416 4491-4629, 4670, 4924, 5018, 5169, 5234-5316, 5534, 5991-6084, 6247), the H and K lines of Ca II, the D lines of Na I and Si II ( $\lambda\lambda$  3853-62, 4128-31, 6347-71). Ti II  $\lambda\lambda$  3759-61 are bright. A few other lines of Ti II could be identified while many more may be blended with the bright iron lines. [OI]  $\lambda$  6300 and  $\lambda$  6363 are strong while  $\lambda$  5577 is just visible. The O I lines at  $\lambda$  6157 and  $\lambda$  6455 are strong. The Fe II lines at  $\lambda$  6148 and  $\lambda$  6456 may be contributing partly to the intensities of these lines, since Fe II  $\lambda$  6247 of the same multiplet is fairly strong. N II lines are quite faint. The hydrogen lines, Na I  $\lambda\lambda$  5890-96 and Fe II  $\lambda\lambda$  4923, 5018 and 5169 clearly show P Cygni profiles.

All these lines brightened by April 9 which could partly be an effect of diminishing continuum intensity. The [O I] lines brightened quicker than Fe II  $\lambda\lambda$  5991, 6084 and 6247. The auroral lines [OI]  $\lambda$  5577 and [N II]  $\lambda$  5755 appear quite strong at this stage. The effect of increasing excitation is evident in the brightening of lines due to N II. This effect continues further and the lines of Fe II, Na I, Si II and OI begin to diminish in intensity. The auroral line [OI]  $\lambda$  5577 has faded by May 19, an effect of decreasing density, while [N II]  $\lambda$  5755 is persistent. There is a suggestion that [O III]  $\lambda\lambda$  4959-5007 have appeared on May 19 since the gap between Fe II  $\lambda$  4924 and  $\lambda$  5018 is partially filled up.

The mean absorption velocity obtained from 9 lines on April 9 is  $-1600 \pm 100$  km/sec. This places the nova among the moderately fast galactic novae (Payne-Gaposchkin 1957).

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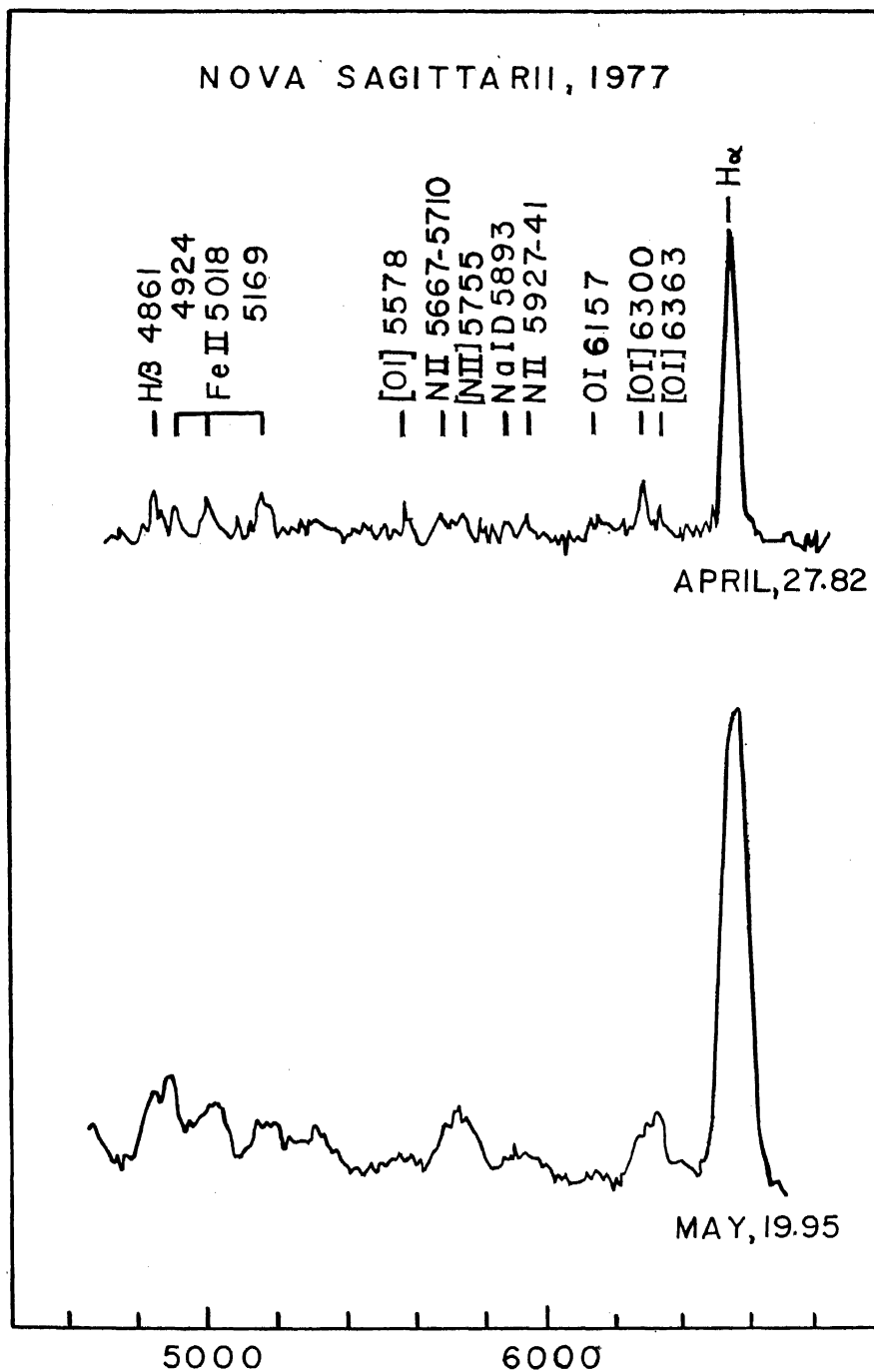


Fig.3 : Scans of the spectrum of Nova Sagittarii 1977 from H $\beta$  to H $\alpha$

**References :**

Kozai, Y. 1977, *I.A.U. Circular* No. 3055.

Payne-Gaposchkin, C. 1957, *The Galactic Novae*, North Holland Publishing Company, Amsterdam.