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UV OBSERVATIONS OF MV LYRAE

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The cataclysmic variable MV Lyrae was observed in a low state ($m_B \simeq 18$) with the International Ultraviolet Explorer from 1200 to 3000 Å, on Dec 27, 1980. Weak emission and absorption features are apparent over a well defined continuum (see Fig. 1).

The ultraviolet observations are combined with published optical and near infrared data obtained when the source was at a comparable optical magnitude (see Fig.2). Two alternative interpretations of the resulting energy distribution seem acceptable. In the former the continuum is attributed to a hot white dwarf with a black body temperature $T_{bb} = 6\text{-}7 \times 10^4$°K and emitting area $A \simeq 10^{18}$cm^2 plus the contribution of a red dwarf companion ($T_{bb} \simeq 3000$°K, $A \simeq 4 \times 10^{21}$cm^2). This model predicts a negligible X-ray flux.

Alternatively, a large portion of the ultraviolet emission could be ascribed to a hot spot ($T_{bb} \simeq 5 \times 10^5$°K; $A \simeq 10^{16}$cm^2) similarly to the case of AM Her, SS Cyg and U Gem (see Fabbiano et al, 1980). In this case the overall energy distribution requires a third component of intermediate temperature ($T \simeq 3 \times 10^4$°K, $A \simeq 10^{18}$cm^2) which could be attributed to a tiny disk. In this picture the soft X-ray flux could be as high as that observed in 1977 by Mason et al, when the source was presumably in a higher optical state.

Simultaneous observations in the UV and soft X-ray bands are needed to discriminate between the two models.

This work is based on I.U.E. observations collected at VILSPA.

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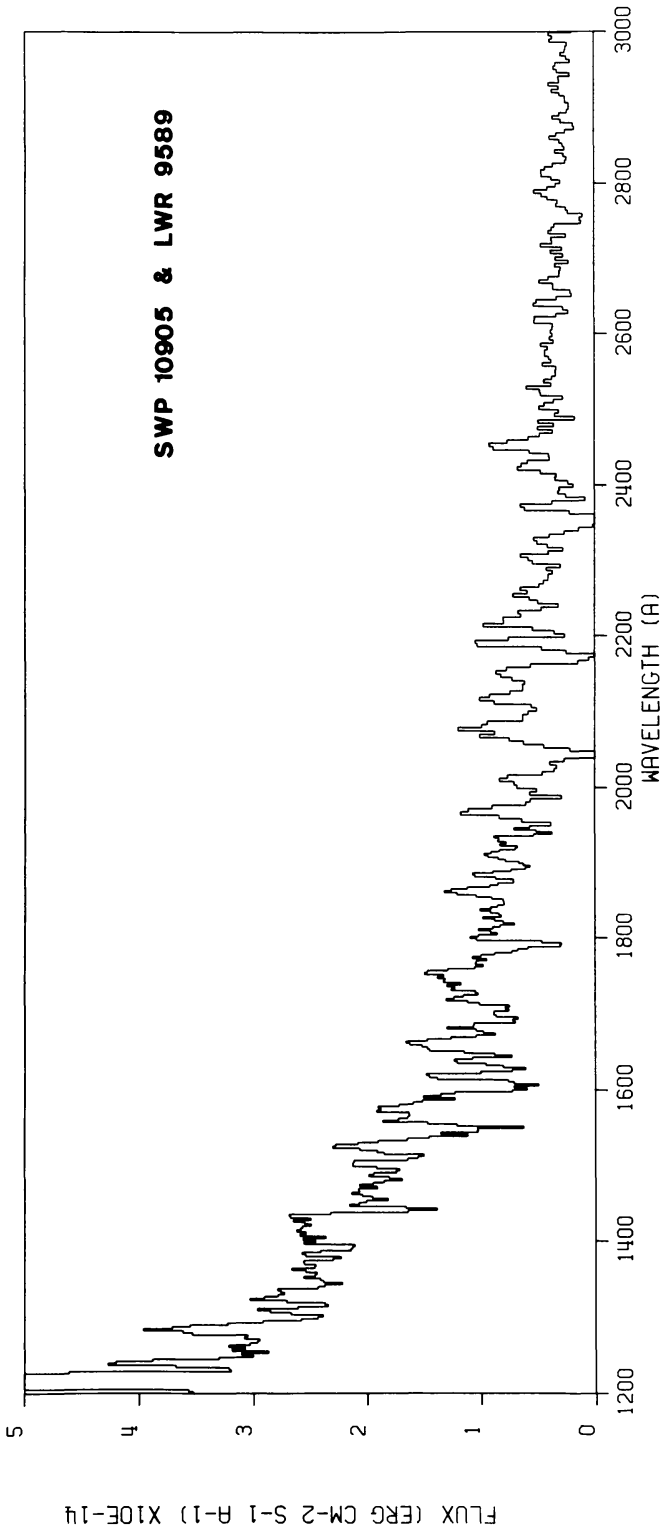

Fig. 1.- Ultraviolet spectrum of MV Lyrae

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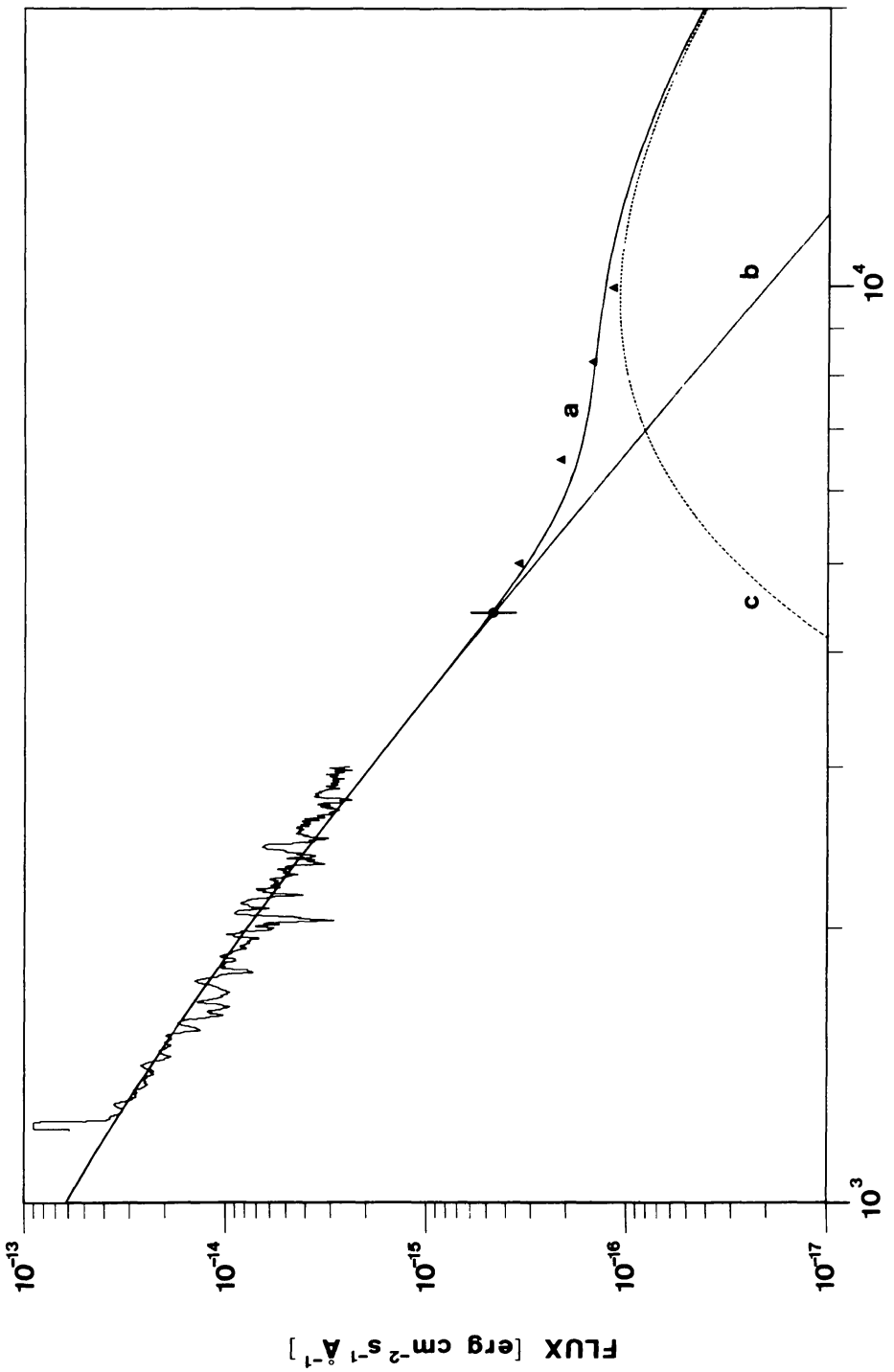

Fig. 2. - Energy distribution of MV Lyrae. Triangles correspond to the 1980 May-August photometry by Schneider et al.(1981); the square with error bar corresponds to the 1980 December photometry by Romano and Rosino (private communication). Curve a is the sum of curve b, a black body distribution with T=6.5x10^{4} °K and area A=1.5x10^{18} cm^{2}, and curve c, representing the non collapsed secondary (T=3x10^{3} °K, A=4x10^{21} cm^{2}).

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