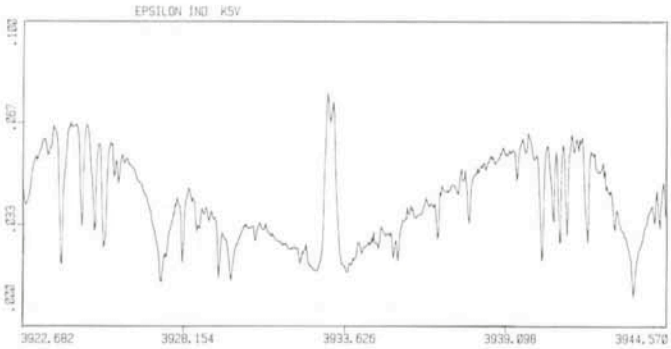

Fig. 9: *Reduced spectrum of the K5V star ε Ind in the K line of Ca II obtained on 27 July 1983 using the CES. Notice the strong central reversal.*

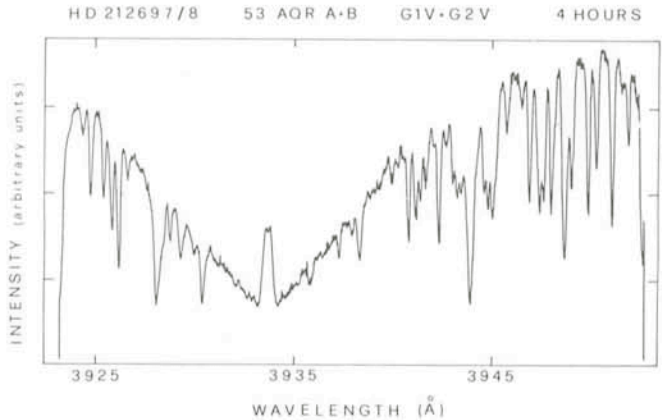

Fig. 10: *Combined spectrum of the visual binary system 53 Aqr A+B in the K line of Ca II obtained on 29 July 1983 using the CES. The chromospheric emission reversal from these young rapidly rotating G1V+G2V stars is much higher than for α Cen A or the Sun.*

spheric emission is strongly enhanced with respect to the average Sun or α Cen A. In fact, it is more similar to that emitted by plage regions on the Sun. This is in agreement with the relatively high rotation rate of the two stars, which is a factor 4 higher than for the Sun. This system was not pointed at by the EINSTEIN Observatory. Observations at X-ray and UV wavelengths from IUE and EXOSAT are planned for 1984 as part of the authors's Guest Investigator programmes on these satellites.

I would like to conclude by emphasizing the importance of obtaining, preferably simultaneously, accurate values of chromospheric and coronal radiative losses for stars of different spectral types and degree of activity. It is not clear at present, even in the case of the Sun, whether the same mechanism is responsible for heating chromospheres as well as coronae. Although magnetic fields appear to be fundamental in both cases, their role in the heating problem may be different at different levels in a stellar atmosphere. It is quite conceivable, on the basis of the available evidence, that magnetoacoustic slow-mode waves may be the main process of non-thermal energy deposition at chromospheric levels, while Alfven waves and possibly current dissipation are probably needed at coronal heights. A correlation diagram of coronal X-ray fluxes vs chromospheric Ca II K fluxes may provide insights into the problem of chromospheric and coronal heating, provided one has some additional information on the ratio of Ca II K losses to total chromospheric radiative losses for stars of different spectral types. Observations made with the CES at La Silla, although somewhat limited by the present difficulty of observing faint objects at short wavelengths, may be instrumental in providing the necessary data basis for such studies.

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