## OXYGEN ABUNDANCES FROM PERMITTED AND FORBIDDEN LINES

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Oxygen overabundances in metal-poor stars were first derived by Conti et al. (1967, ApJ, 148, 105) and Sneden et al. (1979, ApJ, 234, 964), who give a value [O/Fe]= +0.6 for the most metal-poor stars. Controversies on the absolute value of the oxygen overabundance were started with the works by Gratton & Ortolani (1986, A&A, 169, 201) and Barbuy (1988, A&A, 191, 121), who claimed that the overabundance should be [O/Fe] $\approx$ 0.4, and constant in the halo. The controversy was then aggravated by the results of Abia & Rebolo (1989, ApJ, 347, 186) who claimed that [O/Fe] = 1.0 to 1.5, increasing for decreasing metallicities.

The main issue in the last few years has been the inadequacy of the permitted lines (Kiselman 1991, A&A, 245, L9).

In order to further settle the question of the oxygen abundances derived from permitted and forbidden lines, in the present work we study a series of observations of both lines in the same stars.

## CCD *BVRI* PHOTOMETERY OF STARS IN THE GALACTIC BULGE

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The nuclear bulge of the Galaxy contains a stellar population that does not conform to the old ideas we had about its origin and physical characteristics.

Most papers, up to now, claim a high value for the metallicity of the stars of the galactic bulge; it is the authors' belief that the high metallicity stars which have undoubtedly been observed observed in low absorption fields are members of the disk population, either in the foreground or co-occupying the same physical space as those stars that belong to the pure bulge population.

Further studies of the stellar population of the galactic bulge will help in establishing whether these stars are rich or poor in metals, young or old, etc. Once we have their photometric and spectroscopic properties well established we could proceed to the construction of stellar synthesis models for other bulge-like systems for which individual stars may not yet be resolved. These results could also be used in trying to find an appropriate scenario for the formation of the bulge of our own galaxy.

From the preliminary results presented in this paper we may conclude the following:

*(i)* There is a substantial number of disk stars in the low absorption windows through which the galactic bulge is usually studied. Allowance for their presence must always be made.

*(ii)* In agreement with the results found in the bright IR; in the bright visual magnitude range ($V \leq +18$) bulge sources must have on the average red colours ($V-I \geq +2.0$) which, after dereddening [$(V-I)_0 \geq +1.21$] imply spectral types later than G8 III.

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## DETECCION DEL P III EN HD 153919

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Sobre un total de 32 espectros de región ultravioleta, tomados con el *IUE*, los cuales se encuentran distribuídos a lo largo de un ciclo orbital completo, se detectaron líneas en λλ1344, 1380 y 1502 A que fueron identificadas como P III correspondientes a los multipletes 1, 7 y 6 del ultravioleta. En las longitudes de onda λλ1344 y 1502 A las líneas presentan características de perfiles P Cygni.

## ON THE ABSOLUTE MAGNITUDE OF THE METAL RICH RR LYRAE STAR V9 IN 47 TUC

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We present new data on the metal rich RR Lyrae star V9 in the globular cluster 47 Tucanae and preliminary results from a Baade-Wesselink analysis of these data. Optical lightcurves based on approximately 300 *B* and *V* CCD frames has been acquired at the 1-m telescope at Las Campanas and the CCD data reduced using the DoPHOT code developed by M. Mateo and P. Schecter (Carney, Storm, & Williams 1992, PASP, submitted). An infrared *K* band light curve based on 1060 individual IR imager frames from the 1.5-m telescope at CTIO has been acquired as well to provide temperatures as a function of phase on the basis of the (*V-K*) index. Finally, a radial velocity curve has been compiled on the basis of 71 observations with the radial velocity scanner CORAVEL at the Danish 1.54-m telescope at ESO.

The analysis has been improved with respect to the procedure described in Jones et al. (1992, ApJ, 386, 646) by using $\chi^2$-fitting techniques and