

PHOTOELECTRIC PHOTOMETRY OF FIVE PNNi

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In september 1991 we started a photoelectric monitoring of O VI PNNi that are candidate to be non radial pulsators. The observations were obtained using the two head photometer described by Piccioni *et al.* (1979, *Acta Astron.* 29,463), mounted on the 1.5 m telescope of the Bologna Observatory. We generally used the B and sometimes the U filter; only BA 1 was always observed without filters because of its faintness. The reductions have been pursued by means of a program that yields the moving averages of the counts of the variable and comparison star. For the search of periodicities the methods of Deeming (Kurtz 1985, *MNRAS* 213,773) and Scargle (1982, *ApJ* 263,835) were principally used. The list of observations is reported in the following Table, where σ is the mean value of the standard deviations obtained by computing the moving averages.

Log of observations

PNNi	nights	length	ampl.	σ	princ. periods
BA 1	2	4 ^h .1	0 ^m .4	0 ^m .05	23.3 ^{min} , 18.4
IC 2003	4	8.6	0.02	0.01	35.1, 16.0
NGC 1501	1	2.0	0.05	0.01	2.9, 31.9
NGC 6905	3	9.3	0.04	0.02	12.9, 17.6
NGC 7026	4	8.6	0.01	0.01	22.6, 8.9

BA 1 Beside to the quoted periods, other high frequency pulsations at 7.2, 8.5, 9.4 and 11.6 min have been detected in both nights.

IC 2003 The periodicities at 35.1, 36.9, 29.4 and 16.0 min are present in the periodogram of three close nights. Several other oscillations with periods from 120 to 780 sec, registered in at least two nights, confirm the variability of this object.

NGC 1501 Further peaks have been detected at 9.3, 7.1, 11.2 and 18.4 min.

NGC 6905 The periodicities at (772±6) and (1058±15) sec are present in all three nights. A very prominent peak at 888 sec appears in the U observation of september 18 and also on september 6, with remarkable precision. Other low frequency pulsations seems to be real at 22.9, 23.8, 28.8 and 36.3 min. Finally we have noted a number of coincidences among different nights at about 193, 331, 435, 486, 551, 641 and 702 sec. The results confirm the variability of NGC 6905, announced by Bond and Ciardullo (1990, in "Confrontation between stellar pulsation and evolution" C. Cacciari and G. Clementini (eds.) A.S.P. Conf. Series vol.11, p. 529).

NGC 7026 The results are uncertain, we can not rule out variations with amplitude of one hundredth of magnitude or less.