PRELIMINARY RESULTS OF THE WET XCOV22 CAMPAIGN AT CALAR ALTO OBSERVATORY

The science principal investigator for the primary target of this campaign was G. Handler, while S. Dreizler, J.L. Deetjen, T. Nagel and S.L. Schuh were responsible for the observations at Calar Alto Observatory.

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The Whole Earth Telescope collaboration

The Whole Earth Telescope had been initiated as a collaboration of mid-size telescopes, equipped with high-speed photometers, covering different ranges of longitudes as completely as possible (Nather *et al.*, 1990). To resolve the frequency spectrum of a star rapidly pulsating in multiple modes, it is necessary to avoid the severe problem of aliasing (introduced at single sites by the day-night cycle in the frequency range of interest) by uninterrupted monitoring. Since CCD cameras as an alternative instrumentation have also started to contribute to these world-wide coordinated observing campaigns, the Calar Alto 1.2 m telescope has repeatedly been used to participate in WET runs. The WET Xcov22 campaign in May 2002 marked the last opportunity where this was possible since the telescope will in the future not be available to the German-Spanish astronomical community as a whole any more.

The primary target of this latest campaign was PG 1456+103, a pulsating DB white dwarf with a rich mode spectrum that has been unre-

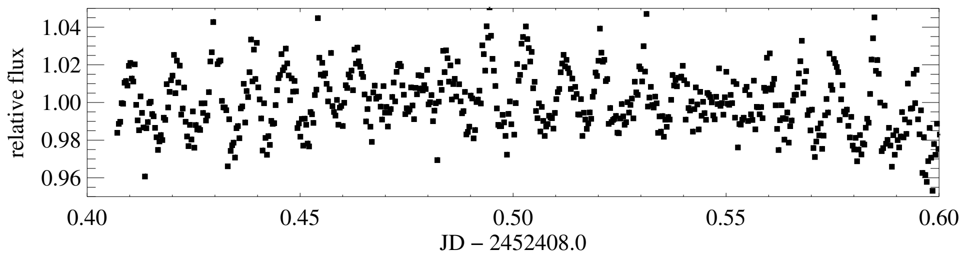

Figure 1. Brightness variation of PG 1456+103 as observed on May 13, 2002.

solved prior to this campaign. Consequently, the run's objective was to lay the observational basis for a full asteroseismological analysis. In addition to the prototype GD 358 (Winget *et al.*, 1994; Bradley *et al.*, 1994; Kepler *et al.*, in prep.), PG 1456+103 could then serve as a second template for ensemble studies of DBVs as a class.

To contribute to this ambitious goal, the nights from May 5 to 16 2002 were awarded for WET observations at the Calar Alto 1.2 m telescope. Equipped with a CCD camera, used without filter, it produced six nights' worth of data as detailed in Table 1. To illustrate the data quality, Fig. 1 shows a sample of the light curve, where the overall curvature is caused by extinction.

TABLE 1. Data log for the Calar Alto 1.2 m telescope WET Xcov22 observations.

Object	start [UT]		length	frames	exposure & cycle time	
PG 1456+103	2002 May 11	23:45	4.1 h	499	20 s	29.7 s
PG 1456+103	2002 May 12	20:15	8.1 h	986	20 s	29.4 s
PG 1456+103	2002 May 13	20:20	7.5 h	921	20 s	29.4 s
PG 1456+103	2002 May 14	20:10	6.9 h	858	20 s	29.1 s
PG 1456+103	2002 May 15	20:40	5.7 h	695	20 s	29.3 s
PG 1456+103	2002 May 16	23:00	4.7 h	570	20 s	29.5 s

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References

Bradley, P.A. and Winget, D.E. 1994, *ApJ*, **430**, 850.
Kepler, S.O., Nather, R.E., Winget, D.E. et al., in prep.
Nather, R.E., Winget, D.E., Clemens, J.C. et al. 1990, *ApJ*, **361**, 309.
Winget, D., Nather, R. E., Clemens, J. C. et al. 1994, *ApJ*, **430**, 839.