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SuperWASP observations of pulsating Am stars

B Smalley (Keele University), D.W. Kurtz, A.M.S. Smith, L. Fossati, D.R. Anderson, S.C.C. Barros, O.W. Butters, A. Collier Cameron, D.J. Christian, B. Enoch, F. Faedi, C.A. Haswell, C. Hellier, S.Holmes, K. Horne, S.R. Kane, T.A. Lister, P.F.L. Maxted, A.J. Norton, N. Parley, D. Pollacco, E.K. Simpson, I. Skillen, J. Southworth, R.A. Street, R.G. West, P.J. Wheatley, P.L. Wood (Submitted on 1 Jul 2011)

We have studied over 1600 Am stars at a photometric precision of 1 mmag with SuperWASP photometric data. Contrary to previous belief, we find that around 200 Am stars are pulsating delta Sct and gamma Dor stars, with low amplitudes that have been missed in previous, less extensive studies. While the amplitudes are generally low, the presence of pulsation in Am stars places a strong constraint on atmospheric convection, and may require the pulsation to be laminar. While some pulsating Am stars have been previously found to be delta Sct stars, the vast majority of Am stars known to pulsate are presented in this paper. They will form the basis of future statistical studies of pulsation in the presence of atomic diffusion.

Comments: 10 pages, 5 figures, 1 table. Accepted for publication in A&A.

Owing to large size, multi-page Figure 1 is not included. Full

version can be downloaded from this http URL

Subjects: Solar and Stellar Astrophysics (astro-ph.SR)

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