

RECENT OBSERVATIONS OF HIGH-DEGREE SOLAR p -MODE OSCILLATIONS AT THE KITT PEAK NATIONAL OBSERVATORY*

(Invited Review, Abstract)

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Abstract. A brief summary is given of a program which is currently being carried out with the McMath telescope of the Kitt Peak National Observatory in order to study high-degree ($l \gtrsim 150$) solar p -mode oscillations. This program uses a 244×248 pixel CID camera and the main spectrograph of the McMath telescope to obtain velocity-time maps of the oscillations which can be converted into two-dimensional ($k_h - \omega$) power spectra of the oscillations. Several different regions of the solar spectrum have been used in order to study the oscillations at different elevations in the solar atmosphere. The program concentrates on eastward- and westward-propagating sectoral harmonic waves so that measurements can be made of the absolute rotational velocities of the solar photospheric and shallow sub-photospheric layers. Some preliminary results from this program are now available. First, we have been unable to confirm the existence of a radial gradient in the equatorial rotational velocity as was previously suggested. Second, we have indeed been able to confirm the presence of p -mode waves in the solar chromosphere as was first suggested by Rhodes *et al.* (1977). Third, we have been able to demonstrate differences in photospheric and chromospheric power spectra.

Reference

Rhodes, Jr., E. J., Ulrich, R. K., and Simon, G. W.: 1977, in *Proceedings of the November 7–10, 1977 OSO-8 Workshop*, Univ. of Colorado, Boulder, Colo., p. 365.

* Proceedings of the 66th IAU Colloquium: *Problems in Solar and Stellar Oscillations*, held at the Crimean Astrophysical Observatory, U.S.S.R., 1–5 September, 1981.

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