

was constructed from the residual line profile variations calculated by subtracting from each profile the mean for the series. The corresponding Fourier transform is presented in Figure 21. Intensive photometric campaigns (Breger *et al*, *Astron. Astrophys.*, **214**, 209, 1989) have detected several unidentifiable low-degree modes at frequencies near 13.5 cycles/day. These individual frequencies are not resolved in our data but we find the power at this frequency can be identified with an  $|m| = 3$  mode. Additional power is associated with an  $|m| = 10$  mode at  $f = 15.5$  cycles/day. The sensitivity to both low- and high-degree modes demonstrates the enormous advantages offered by high resolution spectroscopy as a tool for mode identification of nonradially pulsating stars.

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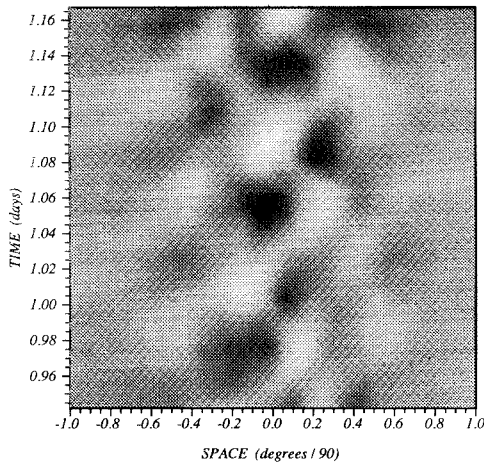


Figure 20: The line profile variations of  $\theta^2$  Tau are shown as a grey-scale map on a space-time grid. The map was interpolated from a time series of 52 observations. The position within the line profile (in units of velocity) has been transformed into angular coordinates on the stellar surface.

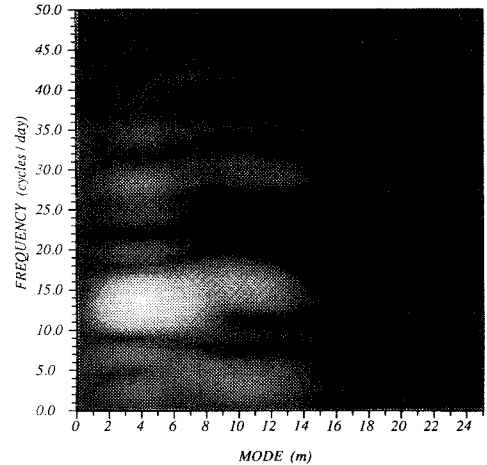


Figure 21: A two-dimensional Fourier transform calculated from the line profile variations of  $\theta^2$  Tau is used to simultaneously identify modes and frequencies of oscillation of the star.

## DIRECTORS' CORNER

### Staff Changes

Mel Yanos who has been serving as accountant at the Waimea headquarters for the last two years, has accepted a new position at the Kona Village Resort in last March. He has been replaced by DeeDee Warren who already has an 8 years business management career behind her. Deedee has spent 7 years at the St-Louis School in Honolulu and the last six months as controller at the Kaneohe Marine Corps base.

Roland Bacon, who spent one year at Waimea on leave from the Observatoire de Lyon, went back to his home institute in last March. He shared his vast experience of TIGER observation and reduction procedures with the CFHT staff and paved the way for the implementation of this observing mode in MOS-SIS.

CFHT has now a complete staff in the optics group. The last vacant position has been filled by Wendy Harrison. Wendy has accumulated an impressive experience as senior research engineer for AVCO RESEARCH at the Maui Satellite Tracking Station for the last 5 years. She will be technician in charge of the new f/4 coudé spectrograph. Her experience will also be put to contribution in the new CFHT adaptive optics project.

### 1990 CFHT Refereed Staff Publications

- Arsenault, R., Roy, J.-R., Boulesteix, J. "Large-Scale Formation of Massive Stars in the Spiral Galaxy NGC 4321," *Astron. Astrophys.*, **234**, 23.
- \*Bender, R., Nieto, J.-L. "Internal Kinematics of Low-Luminosity Elliptical Galaxies," *Astron. Astrophys.*, **239**, 97.
- Boesgaard, A.M., Friel, E.D. "Chemical Composition of Open Clusters. I. Fe/H from High-Resolution Spectroscopy," *Astrophys. J.*, **351**, 467.
- \*Bouvier, J. "Rotation in T Tauri Stars. II. Clues for Magnetic Activity," *Astron. J.*, **99**, 946.

- Davidge, T.J. "Two Micron Spectroscopy of the Nucleus of M32," *Astron. J.*, **99**, 561.
- Davidge, T.J., Maillard, J.-P. "Two Micron Spectroscopy of the Blue Compact Dwarf Galaxy Haro 2," *Astrophys. J.*, **351**, 432.
- Davidge, T.J., "Two Micron Spectroscopy of Galactic and M31 Globular Clusters," *Astrophys. J. Letters*, **351**, L37.
- Davidge, T.J., Alloin, D., Jablonka, P. "Absorption-Line Gradients in the Optical Spectrum of the M31 Globular Cluster Vetesnik 42," *Astrophys. J. Letters*, **358**, L1.
- Davidge, T.J. "CO and CN Absorption in the Near-Infrared Spectra of Luminous M31 Globular Clusters," *J. Roy. Astron. Soc. Can.*, **84**, No.3, 166.
- Davidge, T.J., De Robertis, M.M., Yee, H.K.C. "Long-Slit Spectroscopy of Near-Ultraviolet NH Absorption in the Nuclei of M31," *Astron. J.*, **100**, 1143.
- Davidge, T.J., Pritchett, C.J. "The Nature of Bright Giants in the Halo of NGC 253 and Implications for the Distance Scale," *Astron. J.*, **100**, 102.
- Friel, E.D., Boesgaard, A.M. "Chemical Composition of Open Clusters. II. C/H and C/Fe in F Dwarfs from High-Resolution Spectroscopy," *Astrophys. J.*, **351**, 480.
- Hammer, F., Le Fèvre, O. "High Spatial Imaging of 10 3CR Galaxies with  $z \geq 1$  and Statistical Evidence for Selection Effects from Gravitational Amplification," *Astrophys. J.*, **357**, 38.
- Le Fèvre, O., Hammer, F. "3CR 208.1: A Radio-Loud Quasar at  $z = 1.02$  Gravitationally Amplified by a Foreground Seyfert Galaxy at  $z = 0.159$ ," *Astrophys. J. Letters*, **350**, L1.
- Nieto, J.-L., McClure, R., Fletcher, J.M., Amaud, J., Bacon, R., Bender, R., Comte, G., Poulain, P. "The Core of the Elliptical Galaxy NGC 7052," *Astron. Astrophys. Letters*, **235**, L17.
- \*Nieto, J.-L., Aurière, M., Sebag, J., Amaud, J., Lelièvre, G., Blazit, A., Foy, R., Bonaldo, S., Thouvenot, E. "The Optical Counterpart of the X-Ray Binary in the Globular Cluster NGC 6712," *Astron. Astrophys.*, **239**, 155.
- Nieto, J.-L., Bender, R., Davoust, E., Prugniel, P. "The Low-Mass Extension of the Fundamental Plane of Elliptical Galaxies," *Astron. Astrophys.*, **230**, L17.
- Pécontal, E., Adam, G., Bacon, R., Courtès, G., Georgelin, Y., Monnet, G. "Observation of the Central Region of NGC 5728 with the Integral Field Spectrograph TIGER," *Astron. Astrophys.*, **232**, 331.