

Curriculum Vitæ

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Name: Rachel Howe

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Phone: +44 114 2350715, +44 7867607090 (**mobile**)

Citizenship: British

Education from age 11-18: Sheffield High School. GCE `O'-levels: English Language (A), Mathematics (A), French, (A), Latin (A), Physics (A), Greek (A), Russian (A), Religious Studies (A), Geography (A), History (A), Geology (A) GCE `O/A' level General Paper (B) GCE `A' levels: Physics (A), Mathematics (A), Further Mathematics (A), French (A). GPDST Trust Scholarship 1980

Education after age 18:

B.Sc. (Physics) with 1st Class Honours, University of Birmingham, 1985: Final year options included courses in Solid State Physics, Theoretical Physics (Advanced Quantum Physics and Mathematics), and Elementary Particle Physics, with a short individual study and dissertation on `Modern Developments in the Theory of Static Critical Phenomena'.

PhD (Physics), Thesis title `Ice XI: the ordered form of Ice Ih', University of Birmingham, 1988.

Employment History

- Honorary Senior Research Fellow, University of Birmingham, March 2011
- Associate Scientist for the GONG project at the National Solar Observatory, Tucson April 2004 to October 2010; Assistant Scientist, April 2002, originally appointed as Junior Scientist, November 1997.
- Postdoctoral Research Assistant in the Astronomy Unit, School of Mathematical Sciences, Queen Mary and Westfield College, University of London, February 1995-September 1997.
- Post-Doctoral Research Assistant, University of Birmingham, School of Physics and Space Research, October 1988 - January 1995, working in the High Resolution Spectroscopy Group on the analysis of solar oscillations data.

Teaching Experience: During my time in Birmingham and London I was involved in a variety of small-group undergraduate teaching activities. I have also, on occasion, delivered lectures to undergraduate or MSc students on behalf of absent colleagues.

Research Interests: Helioseismology (the study of solar oscillations) at scales from "Sun as a Star" (e.g., with BiSON, the Birmingham Solar Oscillations Network) to local ring-diagram analysis of data from the HMI, the Helioseismic and Magnetic Imager aboard the Solar Dynamics Observatory; solar-cycle and active-region variations of helioseismic mode parameters; solar interior rotation as studied by global mode inversions and its variation over the solar cycle; helioseismic data reduction and mode fitting; helioseismology with the 1600 and 1700 Angstrom bands of AIA aboard SDO; asteroseismology of solar-like oscillators.

Involvement with major projects:

- Member of Inversions and Data Analysis and Reduction teams for the Global Oscillation Network Group [GONG]
- Member of the Internal Rotation team for the Solar Oscillations Investigation program operating the Michelson Doppler Imager aboard SOHO
- Co-Investigator for the Helioseismic and Magnetic Imager
- Member of Working Group 1 of the Kepler Asteroseismic Consortium

Committees:

- GONG Data Users Committee, 1996-7
- Scientific Organizing Committee for the 2002 GONG/SOHO meeting
- Chair, Solar Physics Division Popular Writing Awards Committee, 2005-6
- Organizing Committee for the 24th National Solar Observatory Workshop, 2007

Memberships:

Member of the American Astronomical Society (June 2000)

Publications

Note: ** Indicates a paper (often with no formal lead author) to which I made a major contribution, *** a paper for which I am the lead author.

Thesis

'Ice XI, the ordered form of ice Ih'
Rachel Howe,
PhD thesis, University of Birmingham, 1988

Volume Edited

Astronomical Society of the Pacific Conference Series Volume 383: Subsurface and Atmospheric Influences on Solar Activity, edited by R. Howe, R. W. Komm, K. S. Balasubramaniam, and G. J. D. Petrie, 2008

Popular Articles

'Deep secrets of the Sun'
Yvonne Elsworth and Rachel Howe,
Physics World, **4** 40-43 (1991)**

Refereed Journals

'The configurational entropy of partially ordered ice',
Rachel Howe and R. W. Whitworth,
Journal of Chemical Physics **86** 6443-6445 (1987) **

'A determination of the crystal structure of ice XI',
Rachel Howe and R. W. Whitworth,
Journal of Chemical Physics, **90** 4450-4453 (1989) **

The electrical conductivity of KOH-doped ice from 70 to 250 K'
Rachel Howe and R. W. Whitworth,
Journal of Physics and Chemistry of Solids, **50** 963-965 (1989) **

'Dielectric studies of the transition of ice Ih to ice XI'
A. V. Zaretskii, Rachel Howe and R. W. Whitworth,
Phil. Mag. B., **63** 757-768 (1991)

'Variation of low-order acoustic solar oscillations over the solar cycle'
Y. Elsworth, R. Howe, G. R. Isaak, C P. McLeod and R. New,
Nature, **345** 322-324 (1990) **

'Evidence from solar seismology against non-standard solar-core models'
Y. Elsworth, R. Howe, G. R. Isaak, C P. McLeod and R. New
Nature, **347** 536-539 (1990) **

- `Low- l p-mode solar eigenfrequency measurements from the Birmingham Network'
Y. Elsworth, R. Howe, G. R. Isaak, C. P. McLeod and R. New
Mon. Not. R. astr. Soc., **251** 7P-9P (1991) **
- `Variation in the strength of low- l solar p-modes 1981-1992'
Y. Elsworth, R. Howe, G. R. Isaak, C. P. McLeod, B. A. Miller, R. New, C.C.Speake and S. J. Wheeler,
Mon. Not. R. astr. Soc., **265** 888-898 (1993) **
- `Solar seismology: the velocity continuum spectrum.'
Y. Elsworth, R. Howe, G. R. Isaak, C. P. McLeod, B. A. Miller, R. New, C. C.Speake and S. J. Wheeler
Mon. Not. R. Astr. Soc. **269**, 529-537 (1994)
- `Solar p-mode frequencies and their dependence on solar activity: recent results from the BiSON network.'
Y. Elsworth, R. Howe, G. R. Isaak, C. P. McLeod, B. A. Miller, R. New, C. C. Speake and S. J. Wheeler,
Astrophysical Journal, **434**, pp.801-806 (1994) **
- `Techniques Used in the Analysis of Solar Oscillations Data from the BiSON (University of Birmingham) Network: I. Daily Calibration'
Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller, R. New and S.J. Wheeler,
Astronomy and Astrophysics, Supplement Series, **113**, pp.379-386 (1995) **
- `Slow Rotation of the Sun's Interior'
Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller, R. New, S.J. Wheeler and D.O. Gough -
Nature, **376**, #6542, pp.669-672 (1995)**
- `Solar Core Rotation: Low-Degree Solar p-Mode Rotational Splitting Results from BiSON'
W.J. Chaplin, Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller and R. New,
Monthly Notices of the Royal Astronomical Society, **280**, pp.849-853 (1996)
- `Low-Degree, $l = 4$ Modes in Full-Disc BiSON Helioseismological Data'
W.J. Chaplin, Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller and R. New,
Monthly Notices of the Royal Astronomical Society, **280**, No.4, pp.1162-1166 (1996)
- `On the use of the error correlation function in helioseismic inversions.'
R.Howe and M.J.Thompson
Monthly notices of the Royal Astronomical Society **281**, 1385-1392 (1996) **
- `Differential Rotation and Dynamics of the solar Interior'
M.J.Thompson, J.Toomre, E.R.Anderson, H.M.Antia, G.Berthomieu, D. Burtonclay, S.M.Chitre,
J.Christensen-Dalsgaard, T.Corbard, M.de Rosa, C.R.Genovese, D.O.Gough, D.A.Haber, J.W.Harvey,
F.Hill, R.Howe, S.G.Korzennik, A.G.Kosovichev, J.W.Leibacher, F.P.Pijpers, J.Provost, E.J.Rhodes,
J.Schou, T.Sekii, P.B.Stark, P.R.Wilson
Science, **272**, no.5266, pp.1300-1305 (1996)
- `The solar acoustic Spectrum and Eigenmode Parameters'
F.Hill, P.B.Stark, R.T.Stebbins, E.R.Anderson, H.M.Antia, T.M.Brown, T.L.Duvall, D.A.Haber,
J.W.Harvey, D.H.Hathaway, R.Howe, R.P.Hubbard, H.P.Jones, J.R.Kennedy, S.G.Korzennik,
A.G.Kosovichev, J.W.Leibacher, K.G.Libbrecht, J.A.Pintar, E.J.Rhodes, J.Schou, M.J.Thompson,
S.Tomczyk, C.G.Toner, R.Toussaint, W.E.Williams
Science, **272**, no.5266, pp.1292-1295 (1996)
- `BiSON Performance'
W.J.Chaplin, Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller, S.J. Wheeler and R. New,
Solar Physics, **168**, No.1, pp.1-18 (1996)

`Techniques used in the analysis of data collected by the Birmingham Solar-Oscillations Network (BiSON)

.2. Frequency domain analysis & data merging'

W.J. Chaplin, Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller, R. New
Astronomy and Astrophysics Supplement Series, (1997) **125**, 195-205

`The observation and simulation of stochastically excited solar p-modes'

W.J. Chaplin, Y. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller, R. New,
Monthly Notices of the Royal Astronomical Society, 1997, **287**, No.1, pp.51-56

`Structure and rotation of the solar interior: Initial results from the MDI medium-l program'

A.G. Kosovichev, J. Schou, P.H. Scherrer, R.S. Bogart, R.I. Bush, J.T. Hoeksema, J. Aloise, L. Bacon,
A. Burnette, C. DeForest, P.M. Giles, K. Leibbrand, R. Nigam, M. Rubin, K. Scott, S.D. Williams, S. Basu,
J. Christensen-Dalsgaard, W. Dappen, E.J. Rhodes, T.L. Duvall, R. Howe, M.J. Thompson, D.O. Gough,
T. Sekii, J. Toomre, T.D. Tarbell, A.M. Title, D. Mathur, M. Morrison, J.L.R. Saba, C.J. Wolfson, I. Zayer, P.N.
Milford,
Solar Physics, 1997, **170**, No.1, pp.43-61

`A strategy for fitting partially blended ridges in GONG solar p-mode spectra'

R. Howe, M.J. Thompson,
1998, *A&AS* **131**, 539 ***

`Helioseismic studies of differential rotation in the solar envelope by the Solar Oscillations Investigation
using the Michelson Doppler Imager'

J. Schou, H.M. Antia, S. Basu, R.S. Bogart, R.I. Bush, S.M. Chitre, J. Christensen-Dalsgaard, M.P. di
Mauro, W. Dziembowski, A. Eff-Darwich, D.O. Gough, D.A. Haber, J.T. Hoeksema, R. Howe, S.G.
Korzennik, A.G. Kosovichev, R.M. Larsen, F.P. Pijpers, P.H. Scherrer, T. Sekii, T.D. Tarbell, A.M. Title,
M.J. Thompson, J. Toomre,
1998, *ApJ* **505**, 390

"Rotation of the Solar Core from BiSON and LOWL frequency observations"

Chaplin, W.J., Christensen-Dalsgaard, J., Elsworth, Y., Howe, R., Isaak, G.R., Larsen, R.M., New, R.,
Schou, J., Thompson, M.J., Tomczyk, S.,
1999 *MNRAS* **308**, p. 405

"Solar-cycle changes in GONG p-mode frequencies 1995-98"

Howe, R., Komm, R.W., and Hill, F.,
1999, *ApJ* **524**, 1084-1095 ***

"Solar-cycle changes in GONG p-mode widths and amplitudes 1995--98"

Komm, R.W., Howe, R., and Hill, F.,
2000, *ApJ* **531**, 1094

"Dynamic Variations at the Base of the Solar Convection Zone"

R. Howe, J. Christensen-Dalsgaard, F. Hill, R.W. Komm, R.M. Larsen, J. Schou, M.J. Thompson, and J.
Toomre
2000, *Science*, **287**, 2456-2460 ***

"Deeply penetrating banded zonal flows in the solar convection zone"

R. Howe, J. Christensen-Dalsgaard, F. Hill, R.W. Komm, R.M. Larsen, J. Schou, M.J. Thompson, and J.
Toomre
2000, *ApJ* **533** L163-L166 ***

"Time variability of rotation in solar convection zone from SOI-MDI"

Toomre, J., Christensen-Dalsgaard, J., Howe, R., Larsen, R.M., Schou, J., and Thompson, M.J.,
2000 *Sol. Phys.*, **192** 437**

"Variations in solar sub-surface rotation from GONG data
Howe, R., Komm, R.W., and Hill, F. 1995-1998"
2000 *Sol. Phys.*, **192** 427 ***

'Width and Energy of Solar P-Modes Observed by GONG'
Komm, R., Howe, R., & Hill, F.
2000, *Astrophys. J.*, **543**, 472.

'Empirical Mode Decomposition and Hilbert Analysis Applied to Rotation Residuals of the Solar Convection Zone
Komm, R. W.; Hill, F.; Howe, R.
2001 *Astrophys. J.*, **558**, 428

'Solar-cycle variation of the sound-speed asphericity from GONG and MDI data 1995-2000'
Antia, H. M.; Basu, S.; Hill, F.; Howe, R.; Komm, R. W.; Schou, J.
2001 *M. Not. R. Ast. Soc.*, **327**, 1029**

'A Comparison of Solar p-Mode Parameters from the Michelson Doppler Imager and the Global Oscillation Network Group: Splitting Coefficients and Rotation Inversions'
Schou, J.; Howe, R.; Basu, S.; Christensen-Dalsgaard, J.; Corbard, T.; Hill, F.; Komm, R.; Larsen, R. M.; Rabello-Soares, M. C.; Thompson, M. J.
2002, *Astrophys. J.*, **567**, 1234**

'Localizing width and energy of solar Global p-modes'
Komm, R., Howe, R., & Hill, F.,
2002, *Astrophys. J.*, **572**, 663**

Detectability of large-scale flows in global helioseismic data - A numerical experiment
Roth, M., Howe, R., & Komm, R.
2002, *A&A*, **396**, 243**

'Localizing the Solar Cycle Frequency Shifts in Global p-modes'
R. Howe, R. W. Komm, and F. Hill ***
2002, *ApJ*, **580**, 1172

Temporal Variation of Angular Momentum in the Solar Convection Zone
R. Komm, R. Howe, B. R. Durney, and F. Hill
2003, *ApJ* **586**, 650**

'A Comparison of Low-degree solar p-mode Parameters from BiSON and GONG: Underlying Values and Temporal Variations'
R. Howe, W. J. Chaplin, Y. Elsworth, F. Hill, R. W. Komm, G. R. Isaak, and R. New
2003, *ApJ*, **588**, 1204***

'A Comparison of Solar P-Mode parameters from MDI and GONG: Mode Frequencies and Structure Inversions'
S. Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, and R. Komm
2003, *ApJ*, **591**, 432*

'Solar Subsurface Fluid Dynamic Descriptors Derived from GONG and MDI Data'
Komm R., Corbard T., Durney B.R., González Hernández I., Hill F., Howe R., & Toner C.,
2004, *ApJ* **605**, 554 *

Activity-Related Changes In Local Solar Acoustic Mode Parameters From Michelson Doppler Imager And Global Oscillations Network Group

R. Howe, R. W. Komm, and F. Hill, D. A. Haber and B. W. Hindman

2004, *ApJ*, **608**,562***

About the rotation of the solar radiative interior

García, R. A.; Corbard, T.; Chaplin, W. J.; Couvidat, S.; Eff-Darwich, A.; Jiménez-Reyes, S. J.; Korzennik, S. G.; Ballot, J.; Boumier, P.; Fossat, E.; Henney, C. J.; Howe, R.; Lazrek, M.; Lochard, J.; Pallé, P. L.; Turck-Chièze, S. *

2004, *SolPhys*, **220**, 269

Kinetic Helicity Density in Solar Subsurface Layers and Flare Activity of Active Regions

R. Komm, R. Howe, F. Hill, I. González-Hernández, C. Toner, T. Corbard

2005, *ApJ*, **630**, 1184

Ring Analysis of Solar Subsurface Flows and Their Relation to Surface Magnetic Activity

R. Komm, R. Howe, F. Hill, I. González-Hernández, C. Toner, T. Corbard

2005, *ApJ*, **631**, 636

Solar Convection Zone Dynamics, 1995-2004

R. Howe, J. Christensen-Dalsgaard, F. Hill, R. Komm, J. Schou, and M. J. Thompson***

2005, *ApJ*, **634**, 1405

Large-scale zonal flows near the solar surface; a comparison of results from local and global helioseismology with direct Doppler measurements***

R. Howe, R. Komm, F. Hill, R. Ulrich, D. A. Haber, B. W. Hindman, J. Schou, M. J. Thompson

2006, *Solar Physics*, **235**, 1

Anomalous variations in low-degree helioseismic mode frequencies***

R. Howe, W. J. Chaplin, Y. Elsworth, F. Hill, R.W. Komm, G. R. Isaak and R. New

2006, *MNRAS*, **369**, 933

Meridional Circulation Variability from Large-Aperture Ring-Diagram Analysis of Global Oscillation Network Group and Michelson Doppler Imager Data

I. Gonzalez Hernandez, R. Komm, F. Hill, R. Howe, T. Corbard, and D. A. Haber

2006, *ApJ*, **638**, 576

Flares, Magnetic Fields, and Subsurface Vorticity: A Survey of GONG and MDI Data

Mason, D.; Komm, R.; Hill, F.; Howe, R.; Haber, D.; Hindman, B. W.

2006, *ApJ*, **645**, 1543

Solar Convection-Zone Dynamics: How sensitive are inversions to subtle dynamo features? ***

R. Howe, M. Rempel, J. Christensen-Dalsgaard, F. Hill, R. Komm, R. Munk Larsen, J. Schou, and M. J. Thompson 2006,

ApJ, **649**, 1155

North-South Asymmetry of zonal and meridional flows determined from ring diagram analysis of GONG data

A. Zaatari, R. Komm, I. González-Hernández, R. Howe, T. Corbard

2006, *Solar Physics*, **236**, 227

Helioseismic Sensing of the Solar Cycle

Komm, R.; Howe, R.; Hill, F.

2006, *Advances in Space Research*, Volume **38**, Issue 5, p. 845-855

On the Variation of the Peak Asymmetry of Low-l Solar p Modes
Jiménez-Reyes, S. J.; Chaplin, W. J.; Elsworth, Y.; García, R. A.; Howe, R.; Socas-Navarro, H.; Toutain, T.,
2007, *ApJ*, **654**, 1135

Divergence and Vorticity of Solar Subsurface Flows Derived from Ring-Diagram Analysis of MDI and GONG Data
Komm, R., R. Howe, F. Hill, M. Miesch, D. Haber, and B. Hindman,
2007, *Astrophysical Journal*, **667**, 584

Temporal variations in solar rotation at the bottom of the convection zone: The current status
Howe, R., J. Christensen-Dalsgaard, F. Hill, R. Komm, J. Schou, M. J. Thompson, and J. Toomre,
2007, *Advances in Space Research*, **40**, 918

Emerging Active Regions Studied with Ring-Diagram Analysis
Komm, R., S. Morita, R. Howe, and F. Hill,
2008, *Astrophysical Journal*, **672**, 1265

Helioseismology and the solar cycle
Howe, R.,
2008, *Advances in Space Research*, **41**, 854

Subsurface Meridional Circulation in the Active Belts,
González Hernández, I., S. Kholikov, F. Hill, R. Howe, and R. Komm,
2008 *Solar Physics*, **252**, 235-245

Subsurface Zonal Flows,
Komm, R., R. Howe, F. Hill, and I. González Hernández,
2009 *Solar Physics*, **254**, 1-15

A Note on the Torsional Oscillation at Solar Minimum ***
Howe, R., Christensen-Dalsgaard, J., Hill, F., Komm, R., Schou, J., Thompson, M. J.
2009, *The Astrophysical Journal*, **701**, L90

Emerging and Decaying Magnetic Flux and Subsurface Flows
Komm, R., Howe, R., Hill, F.
2009, *Solar Physics*, **258**, 30

Solar Interior Rotation and its Variation,
Howe, R.,
2009 *Living Reviews in Solar Physics*, **6**, 1-

The asteroseismic potential of Kepler: first results for solar-type stars
Chaplin, W. J., Appourchaux, T., Elsworth, Y., Garcia, R. A., Houdek, G., Karoff, C., Metcalfe, T. S., Molenda-Zakowicz, J., Monteiro, M. J. P. F. G., Thompson, M. J., Brown, T. M., Christensen-Dalsgaard, J., Gilliland, R. L., Kjeldsen, H., Borucki, W. J., Koch, D., Jenkins, J. M., Ballot, J., Basu, S., Bazot, M., Bedding, T. R., Benomar, O., Bonanno, A., Brandao, I. M., Bruntt, H., Campante, T. L., Creevey, O. L., Di Mauro, M. P., Dogan, G., Dreizler, S., Eggenberger, P., Esch, L., Fletcher, S. T., Frandsen, S., Gai, N., Gaulme, P., Handberg, R., Hekker, S., Howe, R., Huber, D., Korzennik, S. G., Lebrun, J. C., Leccia, S., Martic, M., Mathur, S., Mosser, B., New, R., Quirion, P. -, Regulo, C., Roxburgh, I. W., Salabert, D., Schou, J., Sousa, S. G., Stello, D., Verner, G. A., Arentoft, T., Barban, C., Belkacem, K., Benatti, S., Biazzo, K., Boumier, P., Bradley, P. A., Broomhall, A. -, Buzasi, D. L., Claudi, R. U., Cunha, M. S., D'Antona, F., Deheuvels, S., Derekas, A., Garcia Hernandez, A., Giampapa, M. S., Goupil, M. J., Gruberbauer, M., Guzik, J. A., Hale, S. J., Ireland, M. J., Kiss, L. L., Kitiashvili, I. N., Kolenberg, K., Korhonen, H., Kosovichev, A. G., Kupka, F., Lebreton, Y., Leroy, B., Ludwig, H. -, Mathis, S., Michel,

E., Miglio, A., Montalban, J., Moya, A., Noels, A., Noyes, R. W., Palle, P. L., Piau, L., Preston, H. L., Roca Cortes, T., Roth, M., Sato, K. H., Schmitt, J., Serenelli, A. M., Silva Aguirre, V., Stevens, I. R., Suarez, J. C., Suran, M. D., Trampedach, R., Turck-Chieze, S., Uytterhoeven, K., Ventura, R.
2010, *ApJL*, **713**, L169

Meridional Circulation During the Extended Solar Minimum: Another Component of the Torsional Oscillation?

Gonzalez Hernandez, I., Howe, R., Komm, R., Hill, F.
2010, *The Astrophysical Journal*, **713**, L20

Conference Proceedings

'The possible ordered structures of Ice Ih',

R. Howe,

Journal de Physique 48 Colloque C1 599-603 (1987) ***

'High-Frequency Solar Velocity Noise'

Yvonne Elsworth, Rachel Howe, George Isaak, Clive McLeod, Brek Miller, Clive Speake, Sarah Wheeler, in GONG 1992: Seismic Investigation of the Sun and Stars (Ed. T.M. Brown, ASP Conference Series, Vol 42), 1993, 107-110

'Fine Spacing of $l = 0$, $l = 2$ Acoustic Eigenmodes and the Solar Neutrino Problem: Particle Physics and Cosmological Implications'

Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller, R. New and S.J. Wheeler , in GONG '94: Helio-and Astero-seismology from the Earth and Space (eds. R.K. Ulrich, E.J. Rhodes, Jr. & W. Dappen, ASP Conference Series Vol 76 pp. 515-54(1995) **

'Rotational Splitting of Low-Degree Solar p-modes',

Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller, R. New, S.J. Wheeler and D.O. Gough GONG '94: Helio-and Astero-seismology from the Earth and Space (eds. R.K. Ulrich, E.J. Rhodes, Jr. & W. Dappen, ASP Conference Series Vol 76, pp. 43-46 (1995) **

'Statistical Distribution of Solar p-Mode Amplitudes'

Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller, R. New and S.J. Wheeler, in GONG '94: Helio-and Astero-seismology from the Earth and Space (eds. R.K. Ulrich, E.J. Rhodes, Jr. & W. Dappen, ASP Conference Series Vol 76 pp. 318-321 (1995) **

'Performance of the BISON Network 1994-Present'

Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller, R. New, H.B. van der Raay and S.J. Wheeler in GONG '94: Helio-and Astero-seismology from the Earth and Space (eds. R.K. Ulrich, E.J. Rhodes, Jr. & W. Dappen, ASP Conference Series Vol 76 pp.392-397 (1994) **

'Some Notes on the Calibration of Doppler Velocity Residuals Collected by a Resonant-Scattering Spectrometer'

W.J. Chaplin, Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller and R. New, in Fourth SOHO Workshop: Helioseismology (Ed. J.T. Hoeksema, V. Domingo, B. Fleck and B. Batrick. Pacific Grove, California - 1995. ESA SP-376), pp.163-167 (1995)

'An Investigation of the Correlation Between Unusually Large-Amplitude p Modes and Solar Activity'
W.J. Chaplin, Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller and R. New,
in Fourth SOHO Workshop: Helioseismology (Ed. J.T. Hoeksema, V. Domingo, B. Fleck and B. Batrick.
Pacific Grove, California - 1995.
ESA SP-376), pp.335-339 (1995)

'The Measurement of $l = 4$ Modes in Full-Disc BiSON Data'
W.J. Chaplin, Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller and R. New,
in Fourth SOHO Workshop: Helioseismology (Ed. J.T. Hoeksema, V. Domingo, B. Fleck and B. Batrick.
Pacific Grove, California - 1995.
ESA SP-376), pp.387-390 (1995)

'The Recent Performance of the 6-Station BiSON Network'
W.J. Chaplin, Y.P. Elsworth, R. Howe, G.R. Isaak, C.P. McLeod, B.A. Miller, H.B. van der Raay and R.
New in Fourth SOHO Workshop: Helioseismology (Ed. J.T. Hoeksema, V. Domingo, B. Fleck and B.
Batrick. Pacific Grove, California - 1995.
ESA SP-376), pp.391-396 (1995)

'Internal structure and rotation of the Sun: first results from MDI data'
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