

LIST OF PUBLICATIONS

Refereed publications

- (153) **Stellar ages and convective cores in field main-sequence stars: first asteroseismic application to two Kepler targets**
Silva Aguirre, V., Basu, S., Brandão, I. M., Christensen-Dalsgaard, J., Deheuvels, S., Dogan, G., Metcalfe, T. S., Serenelli, A. M., Ballot, J., Chaplin, W. J., Cunha, M. S., Weiss, A., Appourchaux, T., Casagrande, L., Cassisi, S., Creevey, O. L., Garcia, R. A., Lebreton, Y., Noels, A., Sousa, S. G., Stello, D., White, T. R., Kawaler, S. D., Kjeldsen, H., 2013, *Astrophys. J.*, *in press*
- (152) **Fundamental Properties of Kepler Planet-candidate Host Stars using Asteroseismology**
Huber, Daniel, Chaplin, William J., Christensen-Dalsgaard, Jørgen, Gilliland, Ronald L., Kjeldsen, Hans, Buchhave, Lars A., Fischer, Debra A., Lissauer, Jack J., Rowe, Jason F., Sanchis-Ojeda, Roberto, Basu, Sarbani, Handberg, Rasmus, Hekker, Saskia, Howard, Andrew W., Isaacson, Howard, Karoff, Christoffer, Latham, David W., Lund, Mikkel N., Lundkvist, Mia, Marcy, Geoffrey W., Miglio, Andrea, Silva Aguirre, Victor, Stello, Dennis, Arentoft, Torben, Barclay, Thomas, Bedding, Timothy R., Burke, Christopher J., Christiansen, Jessie L., Elsworth, Yvonne P., Haas, Michael R., Kawaler, Steven D., Metcalfe, Travis S., Mullally, Fergal, Thompson, Susan E., 2013, *Astrophys. J.*, **767**, 127
- (151) **Variation of Stellar Envelope Convection and Overshoot with Metallicity**
Tanner, Joel D., Basu, Sarbani, Demarque, Pierre, 2013, *Astrophys. J.*, **767**, 78
- (150) **Asteroseismic Determination of Obliquities of the Exoplanet Systems Kepler-50 and Kepler-65**
Chaplin, W. J., Sanchis-Ojeda, R., Campante, T. L., Handberg, R., Stello, D., Winn, J. N., Basu, S., Christensen-Dalsgaard, J., Davies, G. R., Metcalfe, T. S., Buchhave, L. A., Fischer, D. A., Bedding, T. R., Cochran, W. D., Elsworth, Y., Gilliland, R. L., Hekker, S., Huber, D., Isaacson, H., Karoff, C., Kawaler, S. D., Kjeldsen, H., Latham, D. W., Lund, M. N., Lundkvist, M., Marcy, G. W., Miglio, A., Barclay, T., Lissauer, J. J., 2013, *Astrophys. J.*, **766**, 101
- (149) **A large sample of calibration stars for Gaia: log g from Kepler and CoRoT fields**
Creevey, O. L., Thévenin, F., Basu, S., Chaplin, W. J., Bigot, L., Elsworth, Y., Huber, D., Monteiro, M. J. P. F. G., Serenelli, A., 2013, *Mon. Not. R. Astr. Soc.*, *in press*
- (148) **Kepler-68: Three Planets, One with a Density between that of Earth and Ice Giants**
Gilliland, Ronald L., Marcy, Geoffrey W., Rowe, Jason F., Rogers, Leslie, Torres, Guillermo, Fressin, Francois, Lopez, Eric D., Buchhave, Lars A., Christensen-Dalsgaard, Jørgen, Dsert, Jean-Michel, Henze, Christopher E., Isaacson, Howard, Jenkins, Jon M., Lissauer, Jack J., Chaplin, William J., Basu, Sarbani, Metcalfe, Travis S., Elsworth, Yvonne, Handberg, Rasmus, Hekker, Saskia, Huber, Daniel, Karoff, Christoffer, Kjeldsen, Hans, Lund, Mikkel N., Lundkvist, Mia, Miglio, Andrea, Charbonneau, David, Ford, Eric B., Fortney, Jonathan J., Haas, Michael R., Howard, Andrew W., Howell, Steve B., Ragozzine, Darin, Thompson, Susan E., 2013, *Astrophys. J.*, **766**, 40
- (147) **A sub-Mercury-sized exoplanet**
Barclay, Thomas, Rowe, Jason F., Lissauer, Jack J., Huber, Daniel, Fressin, Francois, Howell, Steve B., Bryson, Stephen T., Chaplin, William J., Dsert, Jean-Michel, Lopez, Eric D., Marcy, Geoffrey W., Mullally, Fergal, Ragozzine, Darin, Torres, Guillermo, Adams, Elisabeth R., Agol, Eric, Barrado, David, Basu, Sarbani, Bedding, Timothy R., Buchhave, Lars A., Charbonneau, David, Christiansen, Jessie L., Christensen-Dalsgaard, Jørgen, Ciardi, David, Cochran, William D., Dupree, Andrea K., Elsworth, Yvonne, Everett, Mark, Fischer, Debra

- A., Ford, Eric B., Fortney, Jonathan J., Geary, John C., Haas, Michael R., Handberg, Rasmus, Hekker, Saskia, Henze, Christopher E., Horch, Elliott, Howard, Andrew W., Hunter, Roger C., Isaacson, Howard, Jenkins, Jon M., Karoff, Christoffer, Kawaler, Steven D., Kjeldsen, Hans, Klaus, Todd C., Latham, David W., Li, Jie, Lillo-Box, Jorge, Lund, Mikkel N., Lundkvist, Mia, Metcalfe, Travis S., Miglio, Andrea, Morris, Robert L., Quintana, Elisa V., Stello, Dennis, Smith, Jeffrey C., Still, Martin, Thompson, Susan E., 2013, *Nature*, **494**, 452
- (146) **Magnetic Activity Cycles in the Exoplanet Host Star epsilon Eridani**
Metcalfe, T. S., Buccino, A. P., Brown, B. P., Mathur, S., Soderblom, D. R., Henry, T. J., Mauas, P. J. D., Petrucci, R., Hall, J. C., Basu, S., 2013, *Astrophys. J.*, **763**, L26
- (145) **Determining distances using asteroseismic methods**
Silva Aguirre, V., Casagrande, L., Basu, S., Campante, T. L., Chaplin, W. J., Huber, D., Miglio, A., Serenelli, A. M., 2013, *Astron. Nachr.*, **334**, 22
- (144) **Acoustic glitches in solar-type stars from Kepler**
Mazumdar, A., Monteiro, M. J. P. F. G., Ballot, J., Antia, H. M., Basu, S., Houdek, G., Mathur, S., Cunha, M. S., Silva Aguirre, V., Garca, R. A., Salabert, D., Verner, G. A., Christensen-Dalsgaard, J., Metcalfe, T. S., Chaplin, W. J., 2012, *Astron. Nachr.*, **333**, 1040
- (143) **Comparing the Effect of Radiative Transfer Schemes on Convection Simulations**
Tanner, Joel D., Basu, Sarbani, Demarque, Pierre, 2012, *Astrophys. J.*, **759**, 120
- (142) **The Sub-Surface Structure of a Large Sample of Active Regions**
Baldner, Charles S., Bogart, Richard S., Basu, Sarbani, 2012, *Solar Phys.*, in press
- (141) **Thinning of the Sun's Magnetic Layer: The Peculiar Solar Minimum Could Have Been Predicted**
Basu, Sarbani, Broomhall, Anne-Marie, Chaplin, William J., Elsworth, Yvonne, 2012, *Astrophys. J.*, **758**, 43
- (140) **Asteroseismology of the Open Clusters NGC 6791, NGC 6811, and NGC 6819 from 19 Months of Kepler Photometry**
Corsaro, Enrico, Stello, Dennis, Huber, Daniel, Bedding, Timothy R., Bonanno, Alfio, Brogaard, Karsten, Kallinger, Thomas, Benomar, Othman, White, Timothy R., Mosser, Benoit, Basu, Sarbani, Chaplin, William J., Christensen-Dalsgaard, Jørgen, Elsworth, Yvonne P., Garca, Rafael A., Hekker, Saskia, Kjeldsen, Hans, Mathur, Savita, Meibom, Sren, Hall, Jennifer R., Ibrahim, Khadeejah A., Klaus, Todd C., 2012, *Astrophys. J.*, 757, 190
- (139) **Verifying Asteroseismically Determined Parameters of Kepler Stars Using Hipparcos Parallaxes: Self-consistent Stellar Properties and Distances**
Silva Aguirre, V., Casagrande, L., Basu, S., Campante, T. L., Chaplin, W. J., Huber, D., Miglio, A., Serenelli, A. M., Ballot, J., Bedding, T. R., Christensen-Dalsgaard, J., Creevey, O. L., Elsworth, Y., Garca, R. A., Gilliland, R. L., Hekker, S., Kjeldsen, H., Mathur, S., Metcalfe, T. S., Monteiro, M. J. P. F. G., Mosser, B., Pinsonneault, M. H., Stello, D., Weiss, A., Tenenbaum, P., Twicken, J. D., Uddin, K., 2012, *Astrophys. J.*, **757**, 99
- (138) **Seismic Evidence for a Rapidly Rotating Core in a Lower-giant-branch Star Observed with Kepler**
Deheuvels, S., Garcia, R. A., Chaplin, W. J., Basu, S., Antia, H. M., Appourchaux, T., Benomar, O., Davies, G. R., Elsworth, Y., Gizon, L., Goupil, M. J., Reese, D. R., Regulo, C., Schou, J., Stahn, T., Casagrande, L., Christensen-Dalsgaard, J., Fischer, D., Hekker, S., Kjeldsen, H., Mathur, S., Mosser, B., Pinsonneault, M., Valenti, J., Christiansen, J. L., Kinemuchi, K., Mullally, F., 2012, *Astrophys. J.*, **756**, 19
- (137) **Kepler-36: A Pair of Planets with Neighboring Orbits and Dissimilar Densities**
Carter, Joshua A., Agol, Eric, Chaplin, William J., Basu, Sarbani, Bedding, Timothy R., Buchhave, Lars A., Christensen-Dalsgaard, Jørgen, Deck, Katherine M., Elsworth, Yvonne, Fabrycky, Daniel C., Ford, Eric B., Fortney, Jonathan J., Hale, Steven J., Handberg, Rasmus,

Hekker, Saskia, Holman, Matthew J., Huber, Daniel, Karoff, Christopher, Kawaler, Steven D., Kjeldsen, Hans, Lissauer, Jack J., Lopez, Eric D., Lund, Mikkel N., Lundkvist, Mia, Metcalfe, Travis S., Miglio, Andrea, Rogers, Leslie A., Stello, Dennis, Borucki, William J., Bryson, Steve, Christiansen, Jessie L., Cochran, William D., Geary, John C., Gilliland, Ronald L., Haas, Michael R., Hall, Jennifer, Howard, Andrew W., Jenkins, Jon M., Klaus, Todd, Koch, David G., Latham, David W., MacQueen, Phillip J., Sasselov, Dimitar, Steffen, Jason H., Twicken, Joseph D., Winn, Joshua N., 2012, *Science*, **337**, 556

- (136) **Calibrating Convective Properties of Solar-like Stars in the Kepler Field of View**
Bonaca, Ana, Tanner, Joel D., Basu, Sarbani, Chaplin, William J., Metcalfe, Travis S., Monteiro, Mario J. P. F. G., Ballot, Jerome, Bedding, Timothy R., Bonanno, Alfio, Broomhall, Anne-Marie, Bruntt, Hans, Campante, Tiago L., Christensen-Dalsgaard, Jørgen, Corsaro, Enrico, Elsworth, Yvonne, Garcia, Rafael A., Hekker, Saskia, Karoff, Christoffer, Kjeldsen, Hans, Mathur, Savita, Regulo, Clara, Roxburgh, Ian, Stello, Dennis, Trampedach, Regner, Barclay, Thomas, Burke, Christopher J., Caldwell, Douglas A., 2012, *Astrophys. J. Lett.*, **755**, 12
- (135) **Oscillation mode frequencies of 61 main-sequence and subgiant stars observed by Kepler**
Appourchaux, T., Chaplin, W. J., Garcia, R. A., Gruberbauer, M., Verner, G. A., Antia, H. M., Benomar, O., Campante, T. L., Davies, G. R., Deheuvels, S., Handberg, R., Hekker, S., Howe, R., Regulo, C., Salabert, D., Bedding, T. R., White, T. R., Ballot, J., Mathur, S., Silva Aguirre, V., Elsworth, Y. P., Basu, S., Gilliland, R. L., Christensen-Dalsgaard, J., Kjeldsen, H., Uddin, K., Stumpe, M. C., Barclay, T., 2012, *Astron. Astrophys.*, **543**, A54
- (134) **Accurate fundamental parameters and detailed abundance patterns from spectroscopy of 93 solar-type Kepler targets**
Bruntt, H., Basu, S., Smalley, B., Chaplin, W. J., Verner, G. A., Bedding, T. R., Catala, C., Gazzano, J.-C., Molenda-Żakowicz, J., Thygesen, A. O., Uytterhoeven, K., Hekker, S., Huber, D., Karoff, C., Mathur, S., Mosser, B., Appourchaux, T., Campante, T. L., Elsworth, Y., Garcia, R. A., Handberg, R., Metcalfe, T. S., Quirion, P.-O., Regulo, C., Roxburgh, I. W., Stello, D., Christensen-Dalsgaard, J., Kawaler, S. D., Kjeldsen, H., Morris, R. L., Quintana, E. V., Sanderfer, D. T., 2012, *Mon. Not. Roy. Astron. Soc.*, **423**, 122
- (133) **Evolutionary influences on the structure of red-giant acoustic oscillation spectra from 600d of Kepler observations**
Kallinger, T., Hekker, S., Mosser, B., De Ridder, J., Bedding, T. R., Elsworth, Y. P., Gruberbauer, M., Guenther, D. B., Stello, D., Basu, S., Garcia, R. A., Chaplin, W. J., Mullally, F., Still, M., Thompson, S. E., 2012, *Astron. Astrophys.*, **541**, A51
- (132) **A Uniform Asteroseismic Analysis of 22 Solar-type Stars Observed by Kepler**
Mathur, S., Metcalfe, T. S., Woitaszek, M., Bruntt, H., Verner, G. A., Christensen-Dalsgaard, J., Creevey, O. L., Dogan, G., Basu, S., Karoff, C., Stello, D., Appourchaux, T., Campante, T. L., Chaplin, W. J., García, R. A., Bedding, T. R., Benomar, O., Bonanno, A., Deheuvels, S., Elsworth, Y., Gaulme, P., Guzik, J. A., Handberg, R., Hekker, S., Herzberg, W., Monteiro, M. J. P. F. G., Piau, L., Quirion, P.-O., Regulo, C., Roth, M., Salabert, D., Serenelli, A., Thompson, M. J., Trampedach, R., White, T. R., Ballot, J., Brando, I. M., Molenda-Żakowicz, J., Kjeldsen, H., Twicken, J. D., Uddin, K., Wohler, B., 2012, *Astrophys. J.*, **748**, 152
- (131) **Asteroseismology of the Solar Analogs 16 Cyg A and B from Kepler Observations**
Metcalfe, T. S., Chaplin, W. J., Appourchaux, T., García, R. A., Basu, S., Brand ao, I., Creevey, O. L., Deheuvels, S., Dogan, G., Eggenberger, P., Karoff, C., Miglio, A., Stello, D., Yildiz, M., elik, Z., Antia, H. M., Benomar, O., Howe, R., Regulo, C., Salabert, D., Stahn, T., Bedding, T. R., Davies, G. R., Elsworth, Y., Gizon, L., Hekker, S., Mathur, S., Mosser, B., Bryson, S. T., Still, M. D., Christensen-Dalsgaard, J., Gilliland, R. L., Kawaler, S. D., Kjeldsen, H., Ibrahim, K. A., Klaus, T. C., Li, J., 2012, *Astrophys. J. Lett.*, **784**, 10

- (130) **Composition of the Solar Corona, Solar Wind, and Solar Energetic Particles**
L. T. Schmelz, D. V. Reames, R. von Steiger, **S. Basu**, 2012, *Astrophys. J.*, **755**, 33
- (129) **Kepler-22b: A 2.4 Earth-radius Planet in the Habitable Zone of a Sun-like Star**
Borucki, William J., Koch, David G., Batalha, Natalie, Bryson, Stephen T., Rowe, Jason, Fressin, Francois, Torres, Guillermo, Caldwell, Douglas A., Christensen-Dalsgaard, Jørgen, Cochran, William D., DeVore, Edna, Gautier, Thomas N., III, Geary, John C., Gilliland, Ronald, Gould, Alan, Howell, Steve B., Jenkins, Jon M., Latham, David W., Lissauer, Jack J., Marcy, Geoffrey W., Sasselov, Dimitar, Boss, Alan, Charbonneau, David, Ciardi, David, Kaltenegger, Lisa, Doyle, Laurance, Dupree, Andrea K., Ford, Eric B., Fortney, Jonathan, Holman, Matthew J., Steffen, Jason H., Mullally, Fergal, Still, Martin, Tarter, Jill, Ballard, Sarah, Buchhave, Lars A., Carter, Josh, Christiansen, Jessie L., Demory, Brice-Olivier, Dserf, Jean-Michel, Dressing, Courtney, Endl, Michael, Fabrycky, Daniel, Fischer, Debra, Haas, Michael R., Henze, Christopher, Horch, Elliott, Howard, Andrew W., Isaacson, Howard, Kjeldsen, Hans, Johnson, John Asher, Klaus, Todd, Kolodziejczak, Jeffery, Barclay, Thomas, Li, Jie, Meibom, Søren, Prsa, Andrej, Quinn, Samuel N., Quintana, Elisa V., Robertson, Paul, Sherry, William, Shporer, Avi, Tenenbaum, Peter, Thompson, Susan E., Twicken, Joseph D., Van Cleve, Jeffrey, Welsh, William F., Basu, Sarbani, Chaplin, William, Miglio, Andrea, Kawaler, Steven D., Arentoft, Torben, Stello, Dennis, Metcalfe, Travis S., Verner, Graham A., Karoff, Christoffer, Lundkvist, Mia, Lund, Mikkel N., Handberg, Rasmus, Elsworth, Yvonne, Hekker, Saskia, Huber, Daniel, Bedding, Timothy R., Rapin, William, 2012, *Astrophys. J.*, **745**, 120
- (128) **Kepler-21b: A 1.6 R_{Earth} Planet Transiting the Bright Oscillating F Subgiant Star HD 179070**
Howell, Steve B., Rowe, Jason F., Bryson, Stephen T., Quinn, Samuel N., Marcy, Geoffrey W., Isaacson, Howard, Ciardi, David R., Chaplin, William J., Metcalfe, Travis S., Monteiro, Mario J. P. F. G., Appourchaux, Thierry, Basu, Sarbani, Creevey, Orlagh L., Gilliland, Ronald L., Quirion, Pierre-Olivier, Stello, Denis, Kjeldsen, Hans, Christensen-Dalsgaard, Jørgen, Elsworth, Yvonne, Garca, Rafael A., Houdek, Günter, Karoff, Christoffer, Molenda-Żakowicz, Joanna, Thompson, Michael J., Verner, Graham A., Torres, Guillermo, Fressin, Francois, Crepp, Justin R., Adams, Elisabeth, Dupree, Andrea, Sasselov, Dimitar D., Dressing, Courtney D., Borucki, William J., Koch, David G., Lissauer, Jack J., Latham, David W., Buchhave, Lars A., Gautier, Thomas N., III, Everett, Mark, Horch, Elliott, Batalha, Natalie M., Dunham, Edward W., Szkody, Paula, Silva, David R., Mighell, Ken, Holberg, Jay, Ballot, Jerme, Bedding, Timothy R., Bruntt, Hans, Campante, Tiago L., Handberg, Rasmus, Hekker, Saskia, Huber, Daniel, Mathur, Savita, Mosser, Benoit, Régulo, Clara, White, Timothy R., Christiansen, Jessie L., Middour, Christopher K., Haas, Michael R., Hall, Jennifer R., Jenkins, Jon M., McCaulif, Sean, Fanelli, Michael N., Kulesa, Craig, McCarthy, Don, Henze, Christopher E., 2012, *Astrophys. J.*, **746**, 123
- (127) **Effect of uncertainties in stellar model parameters on estimated masses and radii of single stars**
Sarbani Basu, Graham A. Verner, William J. Chaplin, Yvonne Elsworth, 2012, *Astrophys. J.*, **746** 76
- (126) **Fundamental properties of five Kepler stars using global asteroseismic quantities and ground-based observations**
O. L. Creevey, G. Dogan, A. Frasca, A. O. Thygesen, S. Basu, J. Bhattacharya, K. Biazzo, I. M. Brandão, H. Bruntt, A. Mazumdar, E. Niemczura, T. Shrotriya, S. G. Sousa, D. Stello, A. Subramaniam, T. L. Campante, R. Handberg, S. Mathur, T. R. Bedding, R. A. García, C. Régulo, D. Salabert, J. Molenda-Żakowicz, P.-O. Quirion, T. R. White, A. Bonanno, W. J. Chaplin, J. Christensen-Dalsgaard, J. L. Christiansen, Y. Elsworth, M. N. Fanelli, C. Karoff, K. Kinemuchi, H. Kjeldsen, N. Gai, M. J.P.F.G. Monteiro, J. C. Suárez, 2012, *Astron. Astrophys.*, **537**, 111

- (125) **Asteroseismology of old open clusters: direct estimate of the integrated RGB mass loss in NGC6791 and NGC6819**
Miglio, A., Brogaard, K., Chaplin, W. J., Montalbán, J., Stello, D., Basu, S., Bressan, A., Grundahl, F., Serenelli, A. M., Elsworth, Y., Girardi, L., Hekker, S., Kallinger, T., Mosser, B., Ventura, P., Bonanno, A., Noels, A., Pinsonneault, M., Silva Aguirre, V., Szabó, R., 2012, *Mon. Not. Roy. Astron. Soc.*, **419**, 2077
- (124) **Frequency dependence of the large frequency separation of solar-like oscillators: Influence of the Helium second-ionization zone**
Hekker, S., Basu, S., Elsworth, Y., Chaplin, W.J., 2011, *Mon. Not. Roy. Astron. Soc.*, **418**, 119
- (123) **Constructing a One-solar-mass Evolutionary Sequence Using Asteroseismic Data from Kepler**
Silva Aguirre, V., Chaplin, W. J., Ballot, J., Basu, S., Bedding, T. R., Serenelli, A. M., Verner, G. A., Miglio, A., Monteiro, M. J. P. F. G., Weiss, A., Appourchaux, T., Bonanno, A., Broomhall, A. M., Bruntt, H., Campante, T. L., Casagrande, L., Corsaro, E., Elsworth, Y., Garca, R. A., Gaulme, P., Handberg, R., Hekker, S., Huber, D., Karoff, C., Mathur, S., Mosser, B., Salabert, D., Schönrich, R., Sousa, S. G., Stello, D., White, T. R., Christensen-Dalsgaard, J., Gilliland, R. L., Kawaler, S. D., Kjeldsen, H., Houdek, G., Metcalfe, T. S., Molenda-Żakowicz, J., Thompson, M. J., Caldwell, D. A., Christiansen, J. L., Wohler, B., 2011, *Astrophys. J. Lett.*, **740**, 2
- (122) **An Asteroseismic Membership Study of the Red Giants in Three Open Clusters Observed by Kepler: NGC 6791, NGC 6819, and NGC 6811**
Stello, D., Meibom, S., Gilliland, R. L., Grundahl, F., Hekker, S., Mosser, B., Kallinger, T., Mathur, S., García, R. A., Huber, D., Basu, S., Bedding, T. R., Brogaard, K., Chaplin, W. J., Elsworth, Y. P., Molenda-Żakowicz, J., Szabó, R., Still, M., Jenkins, J. M., Christensen-Dalsgaard, J., Kjeldsen, H., Serenelli, A. M., Wohler, B., 2011, *Astrophys. J.*, **739**, 13
- (121) **Verification of the Kepler Input Catalog from Asteroseismology of Solar-type Stars**
Verner, G. A., Chaplin, W. J., Basu, S., Brown, T. M., Hekker, S., Huber, D., Karoff, C., Mathur, S., Metcalfe, T. S., Mosser, B., Quirion, P.-O., Appourchaux, T., Bedding, T. R., Bruntt, H., Campante, T. L., Elsworth, Y., García, R. A., Handberg, R., Régulo, C., Roxburgh, I. W., Stello, D., Christensen-Dalsgaard, J., Gilliland, R. L., Kawaler, S. D., Kjeldsen, H., Allen, C., Clarke, B. D., Girouard, F. R., 2011, *Astrophys. J. Lett.*, **738**, 28
- (120) **Amplitudes of Solar-like Oscillations: Constraints from Red Giants in Open Clusters Observed by Kepler**
Stello, D., Huber, D., Kallinger, T., Basu, S., Mosser, B., Hekker, S., Mathur, S., García, R. A., Bedding, T. R., Kjeldsen, H., Gilliland, R. L., Verner, G. A., Chaplin, W. J., Benomar, O., Meibom, S., Grundahl, F., Elsworth, Y. P., Molenda-Żakowicz, Joanna., Szabó, R., Christensen-Dalsgaard, J., Tenenbaum, P., Twicken, J. D., Uddin, K. 2011, *Astrophys. J. Lett.*, **737**, 10
- (119) **Revisiting the solar tachocline: Average properties and temporal variations**
H. M. Antia, Sarbani Basu, 2011, *Astrophys. J. Lett.*, **735**, L45
- (118) **Asteroseismic inferences on red giants in open clusters NGC 6791, NGC 6819, and NGC 6811 using Kepler**
Hekker, S., Basu, S., Stello, D., Kallinger, T., Grundahl, F., Mathur, S., García, R. A., Mosser, B., Huber, D., Bedding, T. R., Szabó, R., De Ridder, J., Chaplin, W. J., Elsworth, Y., Hale, S. J., Christensen-Dalsgaard, J., Gilliland, R. L., Still, M., McCauliff, S., Quintana, E. V., 2011, *Astron. Astrophys.*, **530**, 100
- (117) **Sounding Open Clusters: Asteroseismic Constraints from Kepler on the Properties of NGC 6791 and NGC 6819**
Basu, Sarbani, Grundahl, Frank, Stello, Dennis, Kallinger, Thomas, Hekker, Saskia, Mosser,

- Benoit, García, Rafael A., Mathur, Savita, Brogaard, Karsten, Bruntt, Hans, Chaplin, William J., Gai, Ning, Elsworth, Yvonne, Esch, Lisa, Ballot, Jerome, Bedding, Timothy R., Gruberbauer, Michael, Huber, Daniel, Miglio, Andrea, Yildiz, Mutlu, Kjeldsen, Hans, Christensen-Dalsgaard, Jrgen, Gilliland, Ronald L., Fanelli, Michael M., Ibrahim, Khadeejah A., Smith, Jeffrey C., 2011, *Astron. Astrophys. Lett.*, **729**, 10
- (116) **An In-depth Study of Grid-based Asteroseismic Analysis** Gai, Ning, Basu, Sarbani, Chaplin, William J., Elsworth, Yvonne, 2011, *Astrophys. J.*, **730**, 63
- (115) **Evidence for the Impact of Stellar Activity on the Detectability of Solar-like Oscillations Observed by Kepler**
Chaplin, W. J., Bedding, T. R., Bonanno, A., Broomhall, A.-M., García, R. A., Hekker, S., Huber, D., Verner, G. A., Basu, S., Elsworth, Y., Houdek, G., Mathur, S., Mosser, B., New, R., Stevens, I. R., Appourchaux, T., Karoff, C., Metcalfe, T. S., Molenda-Żakowicz, J., Monteiro, M. J. P. F. G., Thompson, M. J., Christensen-Dalsgaard, J., Gilliland, R. L., Kawaler, S. D., Kjeldsen, H., Ballot, J., Benomar, O., Corsaro, E., Campante, T. L., Gaulme, P., Hale, S. J., Handberg, R., Jarvis, E., Régulo, C., Roxburgh, I. W., Salabert, D., Stello, D., Mullally, F., Li, J., Wohler, W., 2011, *Astrophys. J. Lett.*, **732**, 5
- (114) **Predicting the Detectability of Oscillations in Solar-type Stars Observed by Kepler**
Chaplin, W. J., Kjeldsen, H., Bedding, T. R., Christensen-Dalsgaard, J., Gilliland, R. L., Kawaler, S. D., Appourchaux, T., Elsworth, Y., García, R. A., Houdek, G., Karoff, C., Metcalfe, T. S., Molenda-Żakowicz, J., Monteiro, M. J. P. F. G., Thompson, M. J., Verner, G. A., Batalha, N., Borucki, W. J., Brown, T. M., Bryson, S. T., Christiansen, J. L., Clarke, B. D., Jenkins, J. M., Klaus, T. C., Koch, D., An, D., Ballot, J., Basu, S., Benomar, O., Bonanno, A., Broomhall, A.-M., Campante, T. L., Corsaro, E., Creevey, O. L., Esch, L., Gai, N., Gaulme, P., Hale, S. J., Handberg, R., Hekker, S., Huber, D., Mathur, S., Mosser, B., New, R., Pinsonneault, M. H., Pricopi, D., Quirion, P.-O., Régulo, C., Roxburgh, I. W., Salabert, D., Stello, D., Suran, M. D., 2011, *Astrophys. J.*, **732**, 54
- (113) **Ensemble Asteroseismology of Solar-Type Stars with the NASA Kepler Mission**
Chaplin, W. J., Kjeldsen, H., Christensen-Dalsgaard, J., Basu, S., Miglio, A., Appourchaux, T., Bedding, T. R., Elsworth, Y., García, R. A., Gilliland, R. L., Girardi, L., Houdek, G., Karoff, C., Kawaler, S. D., Metcalfe, T. S., Molenda-Żakowicz, J., Monteiro, M. J. P. F. G., Thompson, M. J., Verner, G. A., Ballot, J., Bonanno, A., Brando, I. M., Broomhall, A.-M., Bruntt, H., Campante, T. L., Corsaro, E., Creevey, O. L., Doan, G., Esch, L., Gai, N., Gaulme, P., Hale, S. J., Handberg, R., Hekker, S., Huber, D., Jimnez, A., Mathur, S., Mazumdar, A., Mosser, B., New, R., Pinsonneault, M. H., Pricopi, D., Quirion, P.-O., Régulo, C., Salabert, D., Serenelli, A. M., Aguirre, V. Silva, Sousa, S. G., Stello, D., Stevens, I. R., Suran, M. D., Uytterhoeven, K., White, T. R., Borucki, W. J., Brown, T. M., Jenkins, J. M., Kinemuchi, K., Van Cleve, J., Klaus, T. C., 2011, *Science*, **332**, 54.
- (112) **Evidence for Solar Frequency Dependence on Sunspot Type**
C. S. Baldner, R. S. Bogart, Sarbani Basu, 2011, *Astrophys. J. Lett.*, **733**, 5
- (111) **Asteroseismology of Solar-type stars with Kepler II: Stellar Modeling**
T.S. Metcalfe, M.J.P.F.G. Monteiro, M.J. Thompson, W.J. Chaplin, S. Basu, A. Bonanno, M.P. DiMauro, G. Dogan, P. Eggenberger, C. Karoff, D. Stello, KASC WG1, 2010, *Astron. Nachr.*, **331**, 977
- (110) **Asteroseismology of Solar-type Stars with Kepler I: Data Analysis**
C. Karoff, W. J. Chaplin, T. Appourchaux, Y. Elsworth, R. A. Garcia, G. Houdek, T. S. Metcalfe, J. Molenda-Żakowicz, M. J. P. F. G. Monteiro, M. J. Thompson, J. Christensen-Dalsgaard, R. L. Gilliland, H. Kjeldsen, S. Basu, T. R. Bedding, T. L. Campante, P. Eggenberger, S. T. Fletcher, P. Gaulme, R. Handberg, S. Hekker, M. Martić, S. Mathur, B. Mosser, C. Régulo, I. W. Roxburgh, D. Salabert, D. Stello, G. A. Verner, K. Belkacem, K. Biazzo, M. S.

- Cunha, M. Gruberbauer, J. A. Guzik, F. Kupka, B. Leroy, H.-G. Ludwig, S. Mathis, A. Noels, R. W. Noyes, T. Roca Cortes, M. Roth, K. H. Sato, J. Schmitt, M. D. Suran, R. Trampedach, K. Uytterhoeven, R. Ventura, P. A. Wilson, 2010, *Astron. Nachr.*, **331**, 972
- (109) **Internal magnetic fields inferred from helioseismic data**
Charles S. Baldner, H.M. Antia, Sarbani Basu, Timothy P. Larson 2010, *Astron. Nachr.*, **331**, 879
- (108) **Solar-like oscillations in cluster stars**
D. Stello, S. Basu, T. R. Bedding, K. Brogaard, H. Bruntt, W. J. Chaplin, J. Christensen-Dalsgaard, P. Demarque, Y. P. Elsworth, R.A. García, R. L. Gilliland, S. Hekker, D. Huber, C. Karoff, H. Kjeldsen, Y. Lebreton, S. Mathur, S. Meibom, J. Molenda-Żakowicz, A. Noels, I. W. Roxburgh, V. S. Aguirre, C. Sterken, R. Szabó, 2010, *Astron. Nachr.*, **331**, 985
- (107) **Asteroseismology of red giant stars from the first four months of Kepler data: Fundamental stellar parameters**
T. Kallinger, B. Mosser, S. Hekker, D. Huber, D. Stello, S. Mathur, S. Basu, T.R. Bedding, W.J. Chaplin, J. De Ridder, Y.P. Elsworth, S. Frandsen, R.A. Garcia, M. Gruberbauer, J.M. Matthews, W.J. Borucki, H. Bruntt, J. Christensen-Dalsgaard, R.L. Gilliland, H. Kjeldsen, D.G. Koch, 2010, *Astron. Astroph.*, **522**, 1
- (106) **Discovery of a 1.6-year Magnetic Activity Cycle in the Exoplanet Host Star iota Horologii**
T.S. Metcalfe, S. Basu, T.J. Henry, D.R. Soderblom, P.G. Judge, M. Knoelker, S. Mathur, M. Rempel, 2010, *Astrophys. J. Lett.*, **723**, 213
- (105) **Solar Rotation Rate during the Cycle 24 Minimum in Activity**
H. M. Antia, Sarbani Basu, 2010, *Astrophys. J.*, **720**, 494
- (104) **A seismic signature of a second dynamo?**
S. T. Fletcher, A.-M. Broomhall, D. Salabert, Sarbani Basu, W.J. Chaplin, Y. Elsworth, R.A. Garcia, R. New, 2010, *Astrophys. J. Lett.*, **718**, L19
- (103) **Determining the initial helium abundance of the Sun**
Aldo M. Serenelli, Sarbani Basu, 2010 *Astrophys. J.*, **719**, 865
- (102) **Characteristics of Solar Meridional Flows During Solar Cycle 23**
Sarbani Basu, H. M. Antia, 2010, *Astrophys. J.*, **717**, 488
- (101) **Determination of stellar radii from asteroseismic Data**
Sarbani Basu, W.J. Chaplin, Y. Elsworth, 2010, *Astrophys. J.*, **710**, 1596
- (100) **Solar-like oscillations in NGC 6819 from Kepler photometry**
D. Stello, S. Basu, H. Bruntt, B. Mosser, I. R. Stevens, T. M. Brown, J. Christensen-Dalsgaard, R. L. Gilliland, H. Kjeldsen, T. Arentoft, J. Ballot, C. Barban, T. R. Bedding, W. J. Chaplin, Y. P. Elsworth, R. A. García, M. J. Goupil, S. Hekker, D. Huber, S. Mathur, S. Meibom, R. Samadi, V. Sangaralingam, C. S. Baldner, K. Belkacem, K. Biazzo, K. Brogaard, J. Carlos Suárez, F. D’Antona, P. Demarque, L. Esch, N. Gai, F. Grundahl, Y. Lebreton, B. Jiang, N. Jevtic, C. Karoff, A. Miglio, J. Molenda-Żakowicz, J. Montalbán, A. Noels, I. W. Roxburgh, A. M. Serenelli, V. Silva Aguirre, C. Sterken, P. Stine, R. Szabó, A. Weiss, W. J. Borucki, D. Koch, J. M. Jenkins, 2010, *Astrophys. J. Lett.*, **713**, 182
- (99) **The Asteroseismic Potential of Kepler: First Results for Solar-Type Stars**
W. J. Chaplin, T. Appourchaux, Y. Elsworth, R. A. Garca, G. Houdek, C. Karoff, T. S. Metcalfe, J. Molenda-akowicz, M. J. P. F. G. Monteiro, M. J. Thompson, T. M. Brown, J. Christensen-Dalsgaard, R. L. Gilliland, H. Kjeldsen, W. J. Borucki, D. Koch, J. M. Jenkins, J. Ballot, S. Basu, M. Bazot, T. R. Bedding, O. Benomar, A. Bonanno, I. M. Brando, H. Bruntt, T. L. Campante, O. L. Creevey, M. P. Di Mauro, G. Doan, S. Dreizler, P. Eggenberger, L. Esch, S. T. Fletcher, S. Frandsen, N. Gai, P. Gaulme, R. Handberg, S. Hekker, R. Howe, D. Huber, S. G. Korzennik, J. C. Lebrun, S. Leccia, M. Martic, S. Mathur, B. Mosser, R. New,

- P.-O. Quirion, C. Régulo, I. W. Roxburgh, D. Salabert, J. Schou, S. G. Sousa, D. Stello, G. A. Verner, T. Arentoft, C. Barban, K. Belkacem, S. Benatti, K. Biazzo, P. Boumier, P. A. Bradley, A.-M. Broomhall, D. L. Buzasi, R. U. Claudi, M. S. Cunha, F. D'Antona, S. Deheuvels, A. Derekas, A. Garca Hernandez, M. S. Giampapa, M. J. Goupil, M. Gruberbauer, J. A. Guzik, S. J. Hale, M. J. Ireland, L. L. Kiss, I. N. Kitiashvili, K. Kolenberg, H. Korhonen, A. G. Kosovichev, F. Kupka, Y. Lebreton, B. Leroy, H.-G. Ludwig, S. Mathis, E. Michel, A. Miglio, J. Montalbán, A. Moya, A. Noels, R. W. Noyes, P. L. Pall, L. Piau, H. L. Preston, T. Roca Cortés, M. Roth, K. H. Sato, J. Schmitt, A. M. Serenelli, V. Silva Aguirre, I. R. Stevens, J. C. Suárez, M. D. Suran, R. Trampedach, S. Turck-Chize, K. Uytterhoeven, R. Ventura, P. A. Wilson, 2010, *Astrophys. J. Lett.*, **713**, 169
- (98) **Kepler Asteroseismology Program: Introduction and first results**
R. L. Gilland, T. M. Brown, J. Christensen-Dalsgaard, H. Kjeldsen, C. Aerts, T. Appourchaux, S. Basu, T. R. Bedding, W. J. Chaplin, M. S. Cunha, P. De Cat, J. De Ridder, J. A. Guzik, G. Handler, S. Kawaler, L. Kiss, K. Kolenberg, D. W. Kurtz, T. S. Metcalfe, M. J. P. F. G. Monteiro, R. Szabo, T. Arentoft, L. Balona, J. Debosscher, Y. P. Elsworth, P. -O. Quirion, D. Stello, J. C. Suárez, W. J. Boricki, J. M. Jenkins, D. Koch., Y. Kondo, D. W. Latham, J. F. Rowe, J. H. Steffen, *Publ. Astron. Soc. Pacific*, **122**, 131
- (97) **Helioseismology as a diagnostic of the solar interior**
Sarbani Basu, 2010, *Astrophys. Sp. Sci.*, **328**, 43
- (96) **Determining stellar radii using large separations: An error analysis**
Sarbani Basu, W.J. Chaplin, Y. Elsworth, 2010, *Astrophys. Sp. Sci.*, **328**, 79
- (95) **2D solar modeling**
P. Ventura, V. Penza, L.-H. Li, S. Sofia, S. Basu, P. Demarque, *Astrophys. Sp. Sci.*, **328**, 295
- (94) **New Solar Composition: The Problem With Solar Models Revisited**
A.M. Serenelli, Sarbani Basu, J.W. Ferguson, M. Asplund, 2009, *Astrophys. J. Lett.*, **705**, 124
- (93) **The relation between $\Delta\nu$ and $\nu_{\max}$ for solar-like oscillations**
D. Stello, S. Basu, W.J. Chaplin, Y. Elsworth, T. R. Bedding, 2009, *Mon. Not. Roy. Astron. Soc.*, **400**, L80
- (92) **Solar Magnetic Field Signatures in Helioseismic Splitting Coefficients**
Charles S. Baldner, H. M. Antia, Sarbani Basu, Timothy P. Larson, 2009, *Astrophys. J.*, **705**, 1704
- (91) **Fresh insights on the structure of the solar core**
Sarbani Basu, W.J. Chaplin, Y. Elsworth, R. New, A.M. Serenelli, 2009, *Astrophys. J.*, **699**, 1403
- (90) **Two dimensional stellar evolution code including arbitrary magnetic fields. II. Precision improvement and inclusion of turbulence**
LinHuai Li, Sabatino Sofia, Paolo Ventura, Valetina Penza, Shaolan Bi, Sarbani Basu, Pierre Demarque, 2009, *Astrophys. J. Suppl. Ser.*, **182**, 584
- (89) **Helioseismology of Sunspots: A Case Study of NOAA Region 9787**
L. Gizon, H. Schunker, C.S. Baldner, S. Basu, A. Birch, R.S. Bogart, D. Braun, T.L. Duvall, S.M. Hanasoge, J. Jackiewicz, M. Roth, T. Stahn, M.J. Thompson, S. Zharkov, 2008, *Rev. Sp. Sc.*, **144**, 249
- (88) **Interpreting Helioseismic Structure Inversion Results of Solar Active Regions**
C.-H. Lin, Sarbani Basu, L.H. Li, 2009, *Solar Physics*, **257**, 37
- (87) **Solar Cycle Related Changes at the Base of the Convection Zone**
C.S. Baldner, Sarbani Basu, 2008, *Astrophys. J.*, **686**, 1349
- (86) **Probing the Subsurface Structures of Active Regions with Ring-Diagram Analysis**
R.S. Bogart, Sarbani Basu, M.C. Rabello-Soares, H. M. Antia, 2008, *Solar Physics*, **251**, 439

- (85) **Solar rotation rate and its gradients during cycle 23**
H. M. Antia, [Sarban Basu](#), S. M. Chitre, 2008, *Astrophys. J.*, **681**, 680
- (84) **Helioseismology and solar abundances**
2008, [Sarban Basu](#), H.M. Antia, *Physics Reports*, **457**, 217
- (83) **Perspectives in global helioseismology, and the road ahead**(invited review)
W.J. Chaplin, [Sarban Basu](#), 2008, *Solar Physics*, **251**, 53
- (82) **Seismological Analysis of the Stars γ Ser and ι Leo: Stellar Parameters and Evolution**
S. L. Bi, [Sarban Basu](#), and L. H. Li, 2008, *Astrophys. J.*, **673**, 1093
- (81) **Solar Heavy-Element Abundance: Constraints from Frequency Separation Ratios of Low-Degree p Modes**
W.J. Chaplin, A.M. Serenelli, [Sarban Basu](#), Y. Elsworth, R. New, G.A. Verner, 2007, *Astrophys. J.*, **670**, 872
- (80) **Seismic Study of the Chemical Composition of the Solar Convection Zone**
Chia-Hsien Lin, H. M. Antia, [Sarban Basu](#), 2007, *Astrophys. J.*, **668**, 603
- (79) **Local helioseismology using ring diagram analysis**
H.M. Antia, [Sarban Basu](#), 2007, *Astron. Nachrichten*, **328**, 257
- (78) **Solar Abundances and Helioseismology: Fine Structure Spacings and Separation Ratios of Low-Degree p Modes**
[Sarban Basu](#), W. J. Chaplin, Y. Elsworth, Roger New, A. M. Serenelli, G. A. Verner, 2007, *Astrophys. J.*, **655**, 660
- (77) **Structure of the near-surface layers of the Sun: asphericity and time variation**
[Sarban Basu](#), H.M.Antia, R.S.Bogart, 2007, *Astrophys. J.*, **654**, 1146
- (76) **Asteroseismic Diagnostics of Stellar Convective Cores**
Anwesh Mazumdar, [Sarban Basu](#), Braxton L. Collier, Pierre Demarque, 2006, *Mon. Not. R. Astron. Soc.*, **372**, 949
- (75) **10,000 Standard Solar Models: A Monte Carlo Simulation**
John .N. Bahcall, Aldo M. Serenelli, [Sarban Basu](#), 2006, *Astrophys. J. Suppl.*, **165**, 400
- (74) **Determining solar abundances using helioseismology**
H.M.Antia, [Sarban Basu](#), 2006, *Astrophys. J.*, **644**, 1292
- (73) **2-D Stellar Evolution Code Including Arbitrary Magnetic Fields. I. Mathematical Techniques and Test Cases**
L.H. Li, P. Ventura, [Sarban Basu](#), S. Sofia, P. Demarque, 2006, *Astrophys. J. Suppl.*, **164**, 215
- (72) **The Non-Homologous Nature of Solar Diameter Variations**
S. Sofia, [Sarban Basu](#), P. Demarque, L.H. Li, G. Thullier, 2005, *Astrophys. J. Lett.*, **632**, L147
- (71) **What Is The Neon Abundance Of The Sun?**
J.N. Bahcall, [Sarban Basu](#), A.M. Serenelli, 2005, *Astrophys. J.*, **631**, 1281
- (70) **New Solar Opacities, Abundances, Helioseismology and Neutrino Fluxes**
J.N. Bahcall, A.M. Serenelli, [Sarban Basu](#), 2005, *Astrophys. J.*, **621**, L85
- (69) **The Discrepancy between Solar Abundances and Helioseismology**
H.M. Antia, [Sarban Basu](#), 2005, *Astrophys. J.*, **620**, L129
- (68) **Helioseismological Implications of Recent Solar Abundance Determinations**
J.N. Bahcall, [Sarban Basu](#), M.H. Pinsonneault, A. Serenelli, 2005, *Astrophys. J.*, **618**, 1049
- (67) **Does Solar Structure Vary with Solar Magnetic Activity?**
[Sarban Basu](#), Anna Mandel, 2004, *Astrophys. J. Lett.*, **617**, 155

- (66) **Ring Diagram Analysis of the Structure of Solar Active Regions**
Sarbani Basu, H.M. Antia, Richard S. Bogart, 2004, *Astrophys. J.*, **610**, 1157
- (65) **Constraining solar abundances using helioseismology**
Sarbani Basu, H.M. Antia, 2004, *Astrophys. J. Let.*, **606**, 85
- (64) **Asteroseismic Determination of Helium Abundance in Stellar Envelopes**
Sarbani Basu, Anwesh Mazumdar, H.M. Antia, Pierre Demarque, 2004, *Mon. Not. R. Astron. Soc.*, **350**, 277
- (63) **Flare Induced Excitation of Solar p-modes**
A. Ambastha, Sarbani Basu, H.M. Antia, 2003, *Solar Phys.*, **218**, 151
- (62) **Global parameter and helioseismic tests of solar variability models**
L. H. Li, S. Basu, S. Sofia, F. J. Robinson, P. Demarque, D.B. Guenther, 2003, *Astrophys. J.*, **591**, 1267
- (61) **A Comparison of Solar P-Mode Parameters from MDI and GONG: Mode Frequencies and Structure Inversions**
Sarbani Basu, J. Christensen-Dalsgaard, R. Howe, J. Schou, M. J. Thompson, F. Hill, and R. Komm, 2003, *Astrophys. J.*, **591**, 432
- (60) **Stellar Inversions**
Sarbani Basu, 2003, *Astrophys. Sp. Sc.*, **284**, 153
- (59) **Changes in Solar Dynamics from 1995 to 2002**
Sarbani Basu, H.M. Antia, 2003, *Astrophys. J.*, **585**, 553
- (58) **Seismic Test of Solar Models, Solar Neutrinos and Implications for Metal-Rich Accretion**
R. A. Winnick, Pierre Demarque, Sarbani Basu, D. B. Guenther, 2002, *Astrophys. J.*, **576**, 1075
- (57) **High-amplitude delta Scuti and SX Phoenicis stars: The effects of chemical composition on pulsations and the period-luminosity relation,**
Matthew Templeton, Sarbani Basu, Pierre Demarque, 2002, *Astrophys. J.*, **576**, 963
- (56) **Inferences on the solar envelope with high-degree modes,**
M.P. Di Mauro, J. Christensen-Dalsgaard, M.C. Rabello-Soares, S. Basu, 2002, *Astron. Astrophys.*, **384**, 666
- (55) **A comparison of solar p mode parameters from MDI and GONG: splitting coefficients and rotation inversions**
J. Schou, R. Howe, S. Basu, J. Christensen-Dalsgaard, T. Corbard, F. Hill, R. Komm, R.M. Larsen, M.C. Rabello-Soares, M.J. Thompson, 2002, *Astrophys. J.*, **567**, 1234
- (54) **Asteroseismology of delta Scuti stars — a parameter study and application to seismology of FG Virginis**
Matthew Templeton, Sarbani Basu, Pierre Demarque, 2001, *Astrophys. J.*, **563**, 999
- (53) **Ring Diagram Analysis of the Characteristics of Solar Oscillation Modes in Active Regions**
S. P. Rajaguru, Sarbani Basu, and H.M. Antia, 2001, *Astrophys. J.*, **563**, 410
- (52) **Temporal variations of solar rotation rate at high latitudes**
H. M. Antia, Sarbani Basu, 2001, *Astrophys. J.*, **559**, L67
- (51) **Solar-cycle variation of the sound-speed asphericity from GONG and MDI data 1995-2000**
H.M. Antia, S. Basu, F. Hill, R. Howe, R.W. Komm, J. Schou, 2001, *Mon. Not. Roy. Astron. Soc.*, **327**, 1029

- (50) **Solar Models: current epoch and time dependences, neutrinos, and helioseismological properties**,
John N. Bahcall, M.H. Pinsonneault, Sarbani Basu, 2001, *Astrophys. J.*, **555**, 990
- (49) **A study of possible temporal and latitudinal variations in the properties of the solar tachocline**
Sarbani Basu, H. M. Antia, 2001, *Mon. Not. Roy. Astron. Soc.*, **324**, 498
- (48) **Temporal variation of large scale flows in the solar interior**
Sarbani Basu, H. M. Antia, 2000, *J. Astron. Astrophys.*, **21**, 353
- (47) **Source depth of solar p-modes**
Pawan Kumar, Sarbani Basu, 2000, *Astrophys. J.*, **545**, 165
- (46) **Temporal variations of the rotation rate in the solar interior**
H. M. Antia, Sarbani Basu, 2000, *Astrophys. J.*, 541, 442
- (45) **The potential of solar high-degree oscillation frequencies for structure inversion**
M. C. Rabello-Soares, Sarbani Basu, J. Christensen-Dalsgaard, M. P. Di Mauro, *Solar Phys.*, 2000, 193, 345
- (44) **Structure of the solar core: Effect of asymmetry of peak profiles**
S. Basu, S. Turck-Chièze, G. Berthomieu, A. S. Brun, T. Corbard, J. Christensen-Dalsgaard, J. Provost, S. Thiery, A. H. Gabriel, P. Boumier, *Astrophys. J.*, 2000, **535**, 1078
- (43) **Solar cycle variations of large scale flows in the Sun**
Sarbani Basu, H. M. Antia, *Solar Phys.*, 2000, **192**, 469
- (42) **Solar cycle variation in solar f-mode frequencies and radius**
H. M. Antia, Sarbani Basu, J. Pintar, B. Pohl, *Solar Phys.*, 2000, **192**, 459
- (41) **Possible solar cycle variations in the convection zone**
Sarbani Basu, H. M. Antia, *Solar Phys.*, 2000, **192**, 449
- (40) **Does the tachocline show solar cycle related changes?**
Sarbani Basu, Jesper Schou *Solar Phys.*, 2000, **192**, 481
- (39) **Effect of asymmetry in peak profiles on solar oscillation frequencies**
Sarbani Basu, H. M. Antia, *Astrophys. J.*, 2000, **531**, 1088
- (38) **How much do helioseismological inferences depend upon the assumed reference model?**
Sarbani Basu, M. H. Pinsonneault, John N. Bahcall, 2000, *Astrophys. J.*, **529**, 1084
- (37) **Large scale flows in solar interior: Effect of asymmetry in peak profiles**
Sarbani Basu, H. M. Antia, 1999, *Astrophys. J.*, **525**, 517
- (36) **On the choice of parameters in solar structure inversion**
M. C. Rabello-Soares, Sarbani Basu, Christensen-Dalsgaard, J., 1999, *Mon. Not. Roy. Astron. Soc.*, **309**, 35 (astro-ph/9905107)
- (35) **Helioseismic analysis of the hydrogen partition function in the solar interior**
Sarbani Basu, Werner Däppen, Alan Nayfonov, 1999, *Astrophys. J.*, 518, 985 (astro-ph/9810132)
- (34) **Line asymmetry of solar p-modes: Reversal of asymmetry in intensity power spectra**
Pawan Kumar, Sarbani Basu, 1999, *Astrophys. J.*, **519**, 389 (astro-ph/9808144)
- (33) **Line asymmetry of solar p-modes: Properties of acoustic sources**
Pawan Kumar, Sarbani Basu, 1999, *Astrophys. J.* **519**, 396 (astro-ph/9808143)
- (32) **High frequency and high wavenumber solar oscillations**
H. M. Antia, Sarbani Basu, 1999, *Astrophys. J.*, **519**, 400
- (31) **Ring diagram analysis of near-surface flows in the Sun**
Sarbani Basu, H. M. Antia, S. C. Tripathy, 1999, *Astrophys. J.*, **512**, 458

- (30) **How uncertain are solar neutrino predictions?**
J. N. Bahcall, Sarbani Basu, M. H. Pinsonneault, 1998, *Phys. Let. B*, **433**, 1
- (29) **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. A. 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, *Astrophys. J.*, **505**, 390
- (28) **Effects of errors in the solar radius on helioseismic inferences**
Sarbani Basu, 1998, *Mon. Not. Roy. Astron. Soc.*, **298**, 719
- (27) **Solar internal rotation rate and the latitudinal variation of the tachocline**
H. M. Antia, Sarbani Basu, S. M. Chitre, 1998, *Mon. Not. Roy. Astron. Soc.*, **298**, 543
- (26) **First View of the Solar Core from GOLF Acoustic Modes**
S. Turck-Chi  ze, S. Basu, S. Brun, J. Christensen-Dalsgaard, A. Eff Darwich, C. Henney, I. Lopes, F. Perez Hernandez, G. Berthomieu, J. Provost, R. K. Ulrich, F. Baudin, P. Boumier, J. Charra, A. H. Gabriel, R. A. Garcia, G. Grec, C. Renaud, J. M. Robillot and T. Rocca Cortes, 1997, *Solar Phys.*, **175**, 247
- (25) **Performance and Early Results from the GOLF Instrument Flown on the SOHO Mission**
A. H. Gabriel, J. Charra, G. Grec, J.-M. Robillot, T. Roca Cort  s, S. Turck-Chi  ze, R. K. Ulrich, S. Basu, F. Baudin, L. Bertello, P. Boumier, J. Charra, J. Christensen-Dalsgaard, M. Decaudin, H. Dzitko, T. Foglizzo, E. Fossat, R. A. Garcia, J. M. Herreros, M. Lazrek, P. L. Pall  . N. P  trou, C. Renaud, C. R  gulo, 1997, *Solar Phys.*, **175**, 207
- (24) **Solar internal sound speed as inferred from combined BiSON and LOWL oscillation frequencies**
Sarbani Basu, W. J. Chaplin, J. Christensen-Dalsgaard, Y. Elsworth, G. R. Isaak, R. New, J. Schou, M. J. Thompson and S. Tomczyk, 1997, *Monthly Notices Roy. Astron. Soc.*, **292**, 234
- (23) **Localized Helioseismic Constraints on Solar Structure**
John N. Bahcall, Sarbani Basu, Pawan Kumar, 1997, *Astrophys. J. Let.*, **485**, L91
- (22) **Equation of State and Helioseismic Inversions**
Sarbani Basu, J. Christensen-Dalsgaard, 1997, *Astron. Astrophys.*, **322**, L5
- (21) **Seismology of the base of the solar convection zone**
Sarbani Basu, 1997, *Monthly Notices Roy. Astron. Soc.*, **288**, 572
- (20) **SVD Preprocessing of Helioseismic Data for Solar Structure inversion**
Sarbani Basu, J. Christensen-Dalsgaard, M. J. Thompson, 1997, *Astron. Astrophys.*, **321**, 634
- (19) **Seismic measurement of the depth of the solar convection zone**
Sarbani Basu and H. M. Antia, 1997, *Monthly Notices Roy. Astron. Soc.*, **287**, 189
- (18) **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. De Forest, P. M. Giles, K. Leibrand, R. Nigam, M. Rubin, K. Scott, S. D. Williams, Sarbani Basu, J. Christensen-Dalsgaard, W. D  ppen, E. J. Rhodes, Jr., T. L. Duvall, Jr., 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, 1997, *Solar Phys.*, **170**, 43
- (17) **Are Standard Solar Models Reliable?**
John N. Bahcall, M. H. Pinsonneault, Sarbani Basu, J. Christensen-Dalsgaard, 1997, *Phys. Rev. Let.*, **78**, 171

- (16) **The Seismic Structure of the Sun**
D. O. Gough, A. G. Kosovichev, J. Toomre, E. Anderson, H. M. Antia, S. Basu, B. Chaboyer, S. M. Chitre, J. Christensen-Dalsgaard, W. A. Dziembowski, A. Eff-Darwich, J. R. Elliott, P. M. Giles, P. R. Goode, J. A. Guzik, J. W. Harvey, F. Hill, J. W. Leibacher, M. J. P. F. G. Monteiro, O. Richard, T. Sekii, H. Shibahashi, M. Takata, M. J. Thompson, S. Vauclair and S. V. Vorontsov, 1996, *Science*, **272**, 1296
- (15) **The current state of solar modeling**
J. Christensen-Dalsgaard, W. Däppen, S. V. Ajukov, E. R. Anderson, H. M. Antia, S. Basu, V. A. Baturin, G. Berthomieu, B. Chaboyer, S. M. Chitre, A. N. Cox, P. Demarque, J. Donatowicz, W. A. Dziembowski, M. Gabriel, D. O. Gough, D. B. Guenther, J. A. Guzik, J. W. Harvey, F. Hill, G. Houdek, C. A. Iglesias, A. G. Kosovichev, J. W. Leibacher, P. Morel, C. R. Proffitt, J. Provost, J. Reiter, E. J. Rhodes Jr, F. J. Rogers, I. W. Roxburgh, M. J. Thompson and R. K. Ulrich, 1996, *Science*, **272**, 1286
- (14) **Filtering out near-surface uncertainties from helioseismic inversions**
Sarbani Basu, J. Christensen-Dalsgaard, F. Pérez Hernández and M. J. Thompson, 1996, *Monthly Notices Roy. Astron. Soc.*, **280**, 651
- (13) **The Sun's hydrostatic structure from LOWL data**
Sarbani Basu, J. Christensen-Dalsgaard, J. Schou, M. J. Thompson and S. Tomczyk, 1996, *Astrophys. J.*, **460**, 1064
- (12) **On Constructing Seismic Models of the Sun**
Sarbani Basu and M. J. Thompson, 1996, *Astron. Astrophys.*, **305**, 631
- (11) **Helium Abundance in the Solar Envelope**
Sarbani Basu and H. M. Antia, 1995, *Monthly Notices Roy. Astron. Soc.*, **276**, 1402
- (10) **Effects of Diffusion on measurement of overshoot below the solar convection zone**
Sarbani Basu and H. M. Antia, 1994, *Monthly Notices Roy. Astron. Soc.*, **269**, 1137
- (9) **Measuring the Helium Abundance in the Solar Envelope: The Role of the Equation of State,**
H. M. Antia and Sarbani Basu, 1994, *Astrophys. J.*, **426**, 801
- (8) **Nonasymptotic Helioseismic Inversion for Solar Structure,**
H. M. Antia and Sarbani Basu, 1994, *Astron. Astrophys. Suppl. Ser.*, **107**, 421
- (7) **Seismology of the Solar Convection Zone,**
Sarbani Basu and H. M. Antia, 1994, *J. Astrophys. Astron.*, **15**, 143
- (6) **Helioseismic Measurement of the Extent of Overshoot Below the Solar Convection Zone,**
Sarbani Basu, H. M. Antia and D. Narasimha, 1994, *Monthly Notices Roy. Astron. Soc.*, **267**, 209
- (5) **Galactic Chemical Evolution with Nearly Constant Star Formation Rates,**
Sarbani Basu and N. C. Rana, 1993, *Astrophys. J.*, **417**, 145.
- (4) **G-Dwarf Metallicity Distribution Curves Assuming Inhomogeneous Interstellar Medium,**
Sarbani Basu and N. C. Rana, 1992, *Astrophys. Sp. Sci.*, **196**, 1.
- (3) **Derivation of the Age-Metallicity Relation and Initial Mass Function of Stars in the Solar Neighbourhood,**
N. C. Rana and Sarbani Basu, 1992, *Astron. Astrophys.*, **265**, 499.
- (2) **Multiplicity Corrected Mass Function of Main Sequence Stars in the Solar Neighbourhood,**
Sarbani Basu and N. C. Rana, 1992, *Astrophys. J.*, **393**, 373.
- (1) **Distribution of Metals in Dwarf Stars of the Solar Neighbourhood,**
N. C. Rana and Sarbani Basu, 1990, *Astrophys. Sp. Sci.*, **168**, 317.

Book Chapters

- (2) **Solar models: structure, neutrinos, and helioseismological properties**
J.N. Bahcall, Sarbani Basu, M.H. Pinsonneault, 2003, in “*Dynamic Sun*”, Ed. B.N. Dwivedi, Cambridge University Press, p.8
- (1) **Sound speed in normal stars**
Sarbani Basu, 2001, in “*Handbook of Elastic Properties of Solids, Liquids and Gases: Vol. IV: Elastic Properties of Fluids: Liquids and Gases*”, Eds. Levy, Bass, Stern, Academic Press, p. 399

Conference Proceedings

- (102) **How Different Was the Last Solar Minimum?**
Basu, S., Chaplin, W. J., Elsworth, Y., Broomhall, A., Jarvis, E., 2012, in Proc. of a Fujihara Seminar held at Hakone, Japan, 13-17 March, 2011, *ASPCS*, **462**, 261
- (101) **Ensemble Asteroseismology of Red-giant Stars**
Hekker, S., Gilliland, R. L., Basu, S., De Ridder, J., Chaplin, W. J., Elsworth, Y., 2012 in Proc. of a Fujihara Seminar held at Hakone, Japan, 13-17 March, 2011, *ASPCS*, **462**, 139
- (100) **The thermal structure of sunspots from ring diagram analysis**
Charles S. Baldner, Sarbani Basu, Richard S. Bogart 2011 in Proc. GONG 2010/SOHO 24 “A new era of seismology of the Sun and solar-like stars”, *Journal of Physics: Conference Series*, **271**, 012071
- (99) **High frequency power in HMI ring diagrams**
Charles S. Baldner, Sarbani Basu, Richard S. Bogart 2011 in Proc. GONG 2010/SOHO 24 “A new era of seismology of the Sun and solar-like stars”, *Journal of Physics: Conference Series*, **271**, 012059
- (98) **Characterizing Convection in Stellar Atmospheres**
Joel Tanner, Sarbani Basu, Pierre Demarque, Frank Robinson, 2011 in Proc. GONG 2010/SOHO 24 “A new era of seismology of the Sun and solar-like stars”, *Journal of Physics: Conference Series*, **271**, 012080
- (97) **Are recent solar heavy element abundances consistent with helioseismology?**
H.M. Antia, Sarbani Basu, 2011 in Proc. GONG 2010/SOHO 24 “A new era of seismology of the Sun and solar-like stars”, *Journal of Physics: Conference Series*, **271**, 012034
- (96) **Are short-term variations in solar oscillation frequencies the signature of a second solar dynamo?**
Anne-Marie Broomhall, Stephen Fletcher, David Salabert, Sarbani Basu, William J. Chaplin, Yvonne Elsworth, Rafael A. Garcia, Antonio Jimenez, Roger New, 2011 in Proc. GONG 2010/SOHO 24 “A new era of seismology of the Sun and solar-like stars”, *Journal of Physics: Conference Series*, **271**, 012025
- (95) **Zonal Flows Throughout Cycle 23**
H.M. Antia, Sarbani Basu, 2011 in Proc. GONG 2010/SOHO 24 “A new era of seismology of the Sun and solar-like stars”, *Journal of Physics: Conference Series*, **271**, 012072
- (94) **Characteristics of Solar Meridional Flows**
Sarbani Basu, H.M. Antia, 2011 in Proc. GONG 2010/SOHO 24 “A new era of seismology of the Sun and solar-like stars”, *Journal of Physics: Conference Series*, **271**, 012071
- (93) **HMI ring diagram analysis II. Data products**
R. S. Bogart, C. Baldner, S. Basu, D.A. Haber, M. C. Rabello-Soares, 2011 in Proc. GONG 2010/SOHO 24 “A new era of seismology of the Sun and solar-like stars”, *Journal of Physics: Conference Series*, **271**, 012009
- (92) **HMI ring diagram analysis I. The processing pipeline**
R. S. Bogart, C. Baldner, S. Basu, D.A. Haber, M. C. Rabello-Soares, 2011 in Proc. GONG

2010/SOHO 24 “A new era of seismology of the Sun and solar-like stars”, *Journal of Physics: Conference Series*, **271**, 012008

- (91) **Variation in convective properties across the HR Diagram**
J. Tanner, Sarbani Basu, Pierre Demarque, F. Robinson, 2010 in Proc. IAU Symp. 271, “Astrophysical Dynamics: From Stars to Galaxies”, **271**, 401
- (90) **Differences Between the Current Solar Minimum and Earlier Minima**
S. Basu, A.-M. Broomhall, W. J. Chaplin, Y. Elsworth, S. Fletcher, R. New, 2010, in Proc. SOHO-23: Understanding a Peculiar Solar Minimum, ASPCS **428**, 37
- (89) **Comparing Properties of Convection in the Surface Layers of Stars with Different Masses**
F. Robinson, J. Tanner, Sarbani Basu, Pierre Demarque, 2009, in Proc. GONG 2008/SOHO XXI “Solar-stellar dynamos as revealed by helio- and asteroseismology,” ASPCS, **416**, 357
- (88) **What is new with zonal flows?**
H.M. Antia, Sarbani Basu, S. M. Chitre 2009, in Proc. GONG 2008/SOHO XXI “Solar-stellar dynamos as revealed by helio- and asteroseismology,” ASPCS, **416**, , 265
- (87) **Solar cycle related changes at the base of the convection zone**
C.S. Baldner, Sarbani Basu, T. Larson, 2009, in Proc. GONG 2008/SOHO XXI “Solar-stellar dynamos as revealed by helio- and asteroseismology,” ASPCS, **416**, 289
- (86) **Calculation of solar p-mode oscillation frequency splittings based on a two-dimensional solar model**
L.H. Li, Sarbani Basu, S. Sofia, P. Demarque, 2009, in Proc. GONG 2008/SOHO XXI “Solar-stellar dynamos as revealed by helio- and asteroseismology,” ASPCS, **416**, 321
- (85) **Changing magnetic fields in the solar convection zone**
C.S. Baldner, H.M. Antia, Sarbani Basu, T. Larson, 2009, in Proc. GONG 2008/SOHO XXI “Solar-stellar dynamos as revealed by helio- and asteroseismology,” ASPCS, **416**, 289
- (84) **The evolution of the sub-surface structure of long-lived active regions**
C.S. Baldner, R.S. Bogart, Sarbani Basu, H.M. Antia, 2009, in Proc. GONG 2008/SOHO XXI “Solar-stellar dynamos as revealed by helio- and asteroseismology,” ASPCS, **416**, 119
- (83) **The solar metallicity problem: what is the solution?**
Sarbani Basu, 2009, in Proc. GONG 2008/SOHO XXI “Solar-stellar dynamos as revealed by helio- and asteroseismology,” ASPCS, **416**, 193
- (82) **Analysis of the characteristics of solar oscillation modes in active regions**
M. Cristina Rabello-Soares, R.S. Bogart, Sarbani Basu, 2008, *Journal of Physics: Conference Series*, **118**, 012084
- (81) **Examining the effect of the new chemical composition on solar structure by using the adiabatic index**
C.H. Lin, H. M. Antia, Sarbani Basu, 2006, in Proc SOHO 18 ‘Beyond the Spherical Sun: A New Era of Helio- and Asteroseismology’, ESA-SP 624, Ed. K. Fletcher, 87.1
- (80) **Subsurface Structure and Evolution Associated with the Rise and Fall of Intensely Active Regions**
R.S. Bogart, Sarbani Basu, M.C. Rabello-Soares, H.M. Antia, 2006, in Proc SOHO 18 ‘Beyond the Spherical Sun: A New Era of Helio- and Asteroseismology’, ESA-SP 624, Ed. K. Fletcher, p.62.1
- (79) **Seismic estimate of solar heavy element abundances**
Sarbani Basu, H.M. Antia, 2006, in Proc SOHO 18 ‘Beyond the Spherical Sun: A New Era of Helio- and Asteroseismology’, ESA-SP 624, Ed. K. Fletcher, p80.1
- (78) **Temporal variations of solar rotation during solar cycle 23**
Sarbani Basu, H.M. Antia, 2006, in Proc SOHO 18 ‘Beyond the Spherical Sun: A New Era of Helio- and Asteroseismology’, ESA-SP 624, Ed. K. Fletcher, 128.1
- (77) **Examining Possible Errors in the Inversions Results of Active Regions through a Model Study**

- C.H. Lin, L.H. Li, Sarbani Basu, 2006, in Proc SOHO 18 ‘Beyond the Spherical Sun: A New Era of Helio- and Asteroseismology’, ESA-SP 624, Ed. K. Fletcher, 58.1
- (76) **Asphericity and Time Variation of the Near-Surface Layers of the Sun**
Sarbani Basu, H.M. Antia, R.S. Bogart, 2006, in Proc SOHO 17 ‘10 Years of SOHO and Beyond’, ESA-SP 617, Ed. H. Lacoste, 50.1
- (75) **Temporal Variation in the Solar Rotation Rate During the Last One Decade**
Sarbani Basu, H.M. Antia, 2006, in Proc SOHO 17 ‘10 Years of SOHO and Beyond’, ESA-SP 617, Ed. H. Lacoste, 49.1
- (74) **Seismic Determination of Solar Heavy Element Abundances**
Sarbani Basu, H.M. Antia, 2006, in Proc SOHO 17 ‘10 Years of SOHO and Beyond’, ESA-SP 617, Ed. H. Lacoste, 36.1
- (73) **Examining the Effect of the New Chemical Composition on the Solar Structure by Using the Adiabatic Gradient**
C.H. Lin, Sarbani Basu, H.M. Antia, 2006, in Proc SOHO 17 ‘10 Years of SOHO and Beyond’, ESA-SP 617, Ed. H. Lacoste, 44.1
- (72) **Helioseismic evidence for mixing in the Sun**
Sarbani Basu, 2005, in Proc: ESO-Arcetri Workshop ‘Chemical Abundances and Mixing in Stars in the Milky Way and its Satellites’, eds. S. Randich, L. Pasquini (Springer), p. 284
- (71) **Helioseismological Implications of Recent Solar Abundance Determinations**
A.M. Serenelli, J.N. Bahcall, Sarbani Basu, M.H. Pinsonneault, 2004, in Proc: SOHO 14 / GONG 2004 Workshop, ‘Helio- and Asteroseismology: Towards a Golden Future’, ESA SP-559, ed. D. Danesy, 623
- (70) **Solar Luminosity Variations may Occur on Short Time Scales**
L. H. Li, Sarbani Basu, S. Sofia, P. Demarque, 2004, in Proc: SOHO 14 / GONG 2004 Workshop, ‘Helio- and Asteroseismology: Towards a Golden Future’, ESA SP-559, ed. D. Danesy, 544
- (69) **A 2-D Stellar Evolution Code Including Arbitrary Magnetic Fields**
L. H. Li, Sarbani Basu, S. Sofia, P. Demarque, 2004, in Proc: SOHO 14 / GONG 2004 Workshop, ‘Helio- and Asteroseismology: Towards a Golden Future’, ESA SP-559, ed. D. Danesy, 536
- (68) **Zonally Averaged Meridional Flows Determined from Long-Term “RING-DIAGRAM” Analysis**
R. S. Bogart, Sarbani Basu, 2004, in Proc: SOHO 14 / GONG 2004 Workshop, ‘Helio- and Asteroseismology: Towards a Golden Future’, ESA SP-559, ed. D. Danesy, 329
- (67) **a High-Resolution Study of Meridional Flows Near the Solar Equator**
R. S. Bogart Sarbani Basu, D.A. Haber, 2004, in Proc: SOHO 14 / GONG 2004 Workshop, ‘Helio- and Asteroseismology: Towards a Golden Future’, ESA SP-559, ed. D. Danesy, 325
- (66) **Acoustic Modes and the Structure of the Solar Interior**
L. Bertello, F. Varadi, R.K. Ulrich, Sarbani Basu, 2004, in Proc: SOHO 14 / GONG 2004 Workshop, ‘Helio- and Asteroseismology: Towards a Golden Future’, ESA SP-559, ed. D. Danesy, 321
- (65) **Helioseismic Constraints on Photospheric Abundances**
Sarbani Basu, H.M. Antia, 2004, in Proc: SOHO 14 / GONG 2004 Workshop, ‘Helio- and Asteroseismology: Towards a Golden Future’, ESA SP-559, ed. D. Danesy, 317
- (64) **Asteroseismic Determination of Helium Abundance in Solar-Type Stars**
Sarbani Basu, A. Mazumdar, H.M. Antia, P. Demarque, 2004, in Proc: SOHO 14 / GONG 2004 Workshop, ‘Helio- and Asteroseismology: Towards a Golden Future’, ESA SP-559, ed. D. Danesy, 313

- (63) **Temporal Variations in Zonal Flows**
H.M. Antia, Sarbani Basu, 2004, in Proc: SOHO 14 / GONG 2004 Workshop, ‘Helio- and Asteroseismology: Towards a Golden Future’, ESA SP-559, ed. D. Danesy, 305
- (62) **Temporal Variations in the Solar Radius?**
H.M. Antia, Sarbani Basu, 2004, in Proc: SOHO 14 / GONG 2004 Workshop, ‘Helio- and Asteroseismology: Towards a Golden Future’, ESA SP-559, ed. D. Danesy, 301
- (61) **Solar P-Mode Characteristics Associated with Superactive-Regions Observed during OCT NOV 2003**
A. Ambastha, Sarbani Basu, H.M. Antia, R.S. Bogart, 2004, in Proc: SOHO 14 / GONG 2004 Workshop, ‘Helio- and Asteroseismology: Towards a Golden Future’, ESA SP-559, ed. D. Danesy, 293
- (60) **Determining the helium abundance of stellar envelopes**
Sarbani Basu, H.M. Antia, Pierre Demarque, 2004, in Proc: 2nd Eddington Workshop, ‘Stellar-structure and habitable planet finding’, ESA SP-538, eds. F. Favata, S. Aigrain and A. Wilson, 273
- (59) **Temporal variations of the rotation rate in the solar interior**
Sarbani Basu, H.M. Antia, in Proc. SOHO12/GONG2002 workshop “Local and Global Helioseismology: The Present and Future,” ESA SP 517, ed. H. Sawaya-Lacoste, 235
- (58) **Temporal Variations in Solar Structure**
Sarbani Basu, H.M. Antia, in Proc. SOHO12/GONG2002 workshop “Local and Global Helioseismology: The Present and Future,” ESA SP 517, ed. H. Sawaya-Lacoste, 231
- (57) **Helioseismic tests of solar variability models**
LingHuai Li, Sarbani Basu, S. Sofia, F.J. Robinson, P.R. Demarque, D.B. Guenther, in Proc. SOHO12/GONG2002 workshop “Local and Global Helioseismology: The Present and Future,” ESA SP 517, ed. H. Sawaya-Lacoste, 235
- (56) **Near-surface sound-speed from ring-diagrams**
Sarbani Basu, Brooke Simmons, R.S. Bogart, in Proc. SOHO12/GONG2002 workshop “Local and Global Helioseismology: The Present and Future,” ESA SP 517, ed. H. Sawaya-Lacoste, 227
- (55) **A Method for Inverting High-Degree Modes**
Brooke Simmons, Sarbani Basu, in Proc. SOHO12/GONG2002 workshop “Local and Global Helioseismology: The Present and Future,” ESA SP 517, ed. H. Sawaya-Lacoste, 393
- (54) **Seismic signatures of solar flares**
A. Ambastha, Sarbani Basu, H.M. Antia, in Proc. SOHO12/GONG2002 workshop “Local and Global Helioseismology: The Present and Future,” ESA SP 517, ed. H. Sawaya-Lacoste, 219
- (53) **Helioseismic Estimates of Solar Structure and Dynamics (invited review)**
Sarbani Basu, H.M. Antia, in Proc. “3D Stellar Evolution Workshop,” A.S.P. Conference Series, vol. 293, 250
- (52) **Latitudinal and temporal variations of the tachocline**
Sarbani Basu, H.M. Antia, 2002, in Proc. SOHO11: From Solar Minimum to Maximum, ESA SP-508, (ed. A. Wilson) 63
- (51) **Helioseismic tests of a new category of solar models**
L.H. Li, Sarbani Basu, S. Sofia and Pierre Demarque, 2002, in Proc. SOHO11: From Solar Minimum to Maximum, ESA SP-508, 83
- (50) **What does helioseismology tell us about structural changes with the solar cycle?**
Sarbani Basu, 2002 in Proc. SOHO11: From Solar Minimum to Maximum, ESA SP-508, 7
- (49) **The solar rotation rate from solar minimum to maximum**
Sarbani Basu, H.M. Antia, 2002 in Proc. SOHO11: From Solar Minimum to Maximum, ESA SP-508, 59

- (48) **Temporal variations of the solar meridional flows from ring diagram analysis**,
Sarbani Basu, H.M. Antia, 2002 in Proc. SOHO11: From Solar Minimum to Maximum, ESA SP-508, 151
- (47) **Changes in high-degree mode characteristics with magnetic activity**
R.S. Bogart, Sarbani Basu, H.M. Antia, 2002 in Proc. SOHO11: From Solar Minimum to Maximum, ESA SP-508, 145
- (46) **Effect of flares on solar oscillation characteristics**
A. Ambstha, Sarbani Basu, H.M. Antia, 2002 in Proc. SOHO11: From Solar Minimum to Maximum, ESA SP-508, 43
- (45) **Asteroseismology of Delta Scuti Stars - A Parameter Study**
M. Templeton, S. Basu, P. Demarque, 2002, in Proc. IAU Colloquium 185, Leuven, Belgium ed. C. Aerts, T. R. Bedding, J. Christensen-Dalsgaard, 600
- (44) **SOLA inversions for the core structure of solar-type stars**
Sarbani Basu, J. Christensen-Dalsgaard, M.J. Thompson, 2002, in Proc. 1st Eddington Meeting “Stellar Structure and habitable Planet Finding”, ESA SP-485, eds. F. Favata, I.W. Roxburgh, D. Galadi-Enriquez, p. 249
- (43) **Spatially-resolved Analysis of the Upper Convection-Zone**
R. Bogart, J. Schou, S. Basu, D.A. Haber, F. Hill, 2000 in Proc. IAU Symposium 203: Highlights from SOHO and other Space Missions, eds. P. Brekke, B. Fleck, J.B. Gurman, p. 183
- (42) **Comparing mode frequencies from MDI and GONG**
R. Howe, F. Hill, S. Basu, J. Christensen-Dalsgaard, R.W. Komm, R. Munk Larsen, J. Schou, M.J. Thompson, J. Toomre, 2001, in Proc. SOHO 10/GONG 2000 Workshop: Helio- and Asteroseismology at the dawn of the millennium, ESA SP-464, eds. A. Wilson, 137
- (41) **A study of temporal variations of the tachocline**
Sarbani Basu, H.M. Antia, 2001, in Proc. SOHO 10/GONG 2000 Workshop: Helio- and Asteroseismology at the dawn of the millennium, ESA, SP-464, eds. A. Wilson, 297
- (40) **Seismic investigation of changes in the rotation rate in the solar interior**
Sarbani Basu, H.M. Antia, 2001, in Proc. SOHO 10/GONG 2000 Workshop: Helio- and Asteroseismology at the dawn of the millennium, ESA SP-464, eds. A. Wilson, 179
- (39) **Characteristics of high degree p-modes obtained using ring diagram analyses**
Sarbani Basu, H.M. Antia, R.S. Bogart, 2001, in Proc. SOHO 10/GONG 2000 Workshop: Helio- and Asteroseismology at the dawn of the millennium, ESA SP-464, eds. A. Wilson, 183
- (38) **How correlated are f-mode frequencies with solar activity?**
H.M. Antia, 2001, Sarbani Basu, J. Pintar, Jesper Schou, in Proc. SOHO 10/GONG 2000 Workshop: Helio- and Asteroseismology at the dawn of the millennium, ESA SP-464, eds. A. Wilson, 27
- (37) **Seismology of solar-type stars**
S. Basu, J. Christensen-Dalsgaard, M.J.P.F.G. Monteiro, M.J. Thompson, 2001, in Proc. SOHO 10/GONG 2000 Workshop: Helio- and Asteroseismology at the dawn of the millennium, ESA SP-464, eds. A. Wilson, 407
- (37) **Studying Asphericity in the solar sound speed from MDI and GONG data**
H.M. Antia, S. Basu, F. Hill, R. Howe, R.W. Komm, J. Schou, 2001, in Proc. SOHO 10/GONG 2000 Workshop: Helio- and Asteroseismology at the dawn of the millennium, ESA SP-464, eds. A. Wilson, 45
- (36) **Helium Abundance in the solar envelope**
Sarbani Basu, 1999, in *Proc. 19th meeting of the Astronomical Society of India, Bull. Astron. Soc. India*, **28**, 113

- (35) **Effect of asymmetry in peak profile on f-mode frequencies**
H.M. Antia, Sarbani Basu, 1999, in *Proc. 19th meeting of the Astronomical Society of India*, *Bull. Astron. Soc. India*, **28**, 97
- (34) **Seismic Sun**
Sarbani Basu, 1999, in *Proc. 19th meeting of the Astronomical Society of India*, *Bull. Astron. Soc. India*, **28**, 63
- (33) **Helioseismology**
Sarbani Basu, 1998 in *Proc. TASI'98: Neutrinos in Physics and Astrophysics*, from 10^{-33} to 10^{28} cm, ed. P. Langacker, (World Scientific), p 488
- (32) **Solar structure: Models and inversions (working group report)**
S. Turck-Chi  ze, S. Basu, 1998 in *Structure and Dynamics of the Sun and Sun-like Stars*, ESA SP-418 eds. S. G. Korzennik and A. Wilson, (Noordwijk: ESA), vol. 1, p573
- (31) **Sensitivity of the sound speed to the physical processes included in the standard solar model framework**
S. Turck-Chi  ze, S. Basu, G. Berthomieu, A. Bonanno, A. S. Brun, J. Christensen-Dalsgaard, M. Gabriel, P. Morel, J. Provost, S. Turcotte and the GOLF team, 1998 in *Structure and Dynamics of the Sun and Sun-like Stars*, ESA SP-418 eds. S. G. Korzennik and A. Wilson, (Noordwijk: ESA), vol. 1, p555
- (31) **Sensitivity of the sound speed to the physical processes included in the standard solar model framework**
S. Turck-Chi  ze, S. Basu, G. Berthomieu, A. Bonanno, A. S. Brun, J. Christensen-Dalsgaard, M. Gabriel, P. Morel, J. Provost, S. Turcotte and the GOLF team, 1998 in *Structure and Dynamics of the Sun and Sun-like Stars*, ESA SP-418 eds. S. G. Korzennik and A. Wilson, (Noordwijk: ESA), vol. 1, p555
- (30) **The SOI-MDI high latitude jet: the evidence for and against**
R. Howe, H. M. Antia, S. Basu, J. Christensen-Dalsgaard, S. G. Korzennik, J. Schou, M. J. Thompson, 1998, in *Structure and Dynamics of the Sun and Sun-like Stars*, ESA SP-418 eds. S. G. Korzennik and A. Wilson, (Noordwijk: ESA), vol. 2, p803
- (29) **A study of the parameters for solar structure inversion methods**
M. C. Rabello-Soares, Sarbani Basu, J. Christensen-Dalsgaard, 1998, in *Structure and Dynamics of the Sun and Sun-like Stars*, ESA SP-418 eds. S. G. Korzennik and A. Wilson, (Noordwijk: ESA), vol. 1, p505
- (28) **Helioseismic signature of the presence of excited states in the adiabatic exponent**
Sarbani Basu, W. D  ppen, A. Nayfonov, 1998, in *Structure and Dynamics of the Sun and Sun-like Stars*, ESA SP-418 eds. S. G. Korzennik and A. Wilson, (Noordwijk: ESA), vol. 1, p435
- (27) **Ring diagram analysis of velocity fields within the solar convection zone**
Sarbani Basu, H. M. Antia, S. C. Tripathy, 1998, in *Structure and Dynamics of the Sun and Sun-like Stars*, ESA SP-418 eds. S. G. Korzennik and A. Wilson, (Noordwijk: ESA), vol. 2, p705
- (26) **Latitudinal variations in the properties of the tachocline**
Sarbani Basu, H. M. Antia, 1998, in *Structure and Dynamics of the Sun and Sun-like Stars*, ESA SP-418 eds. S. G. Korzennik and A. Wilson, (Noordwijk: ESA), vol. 2, p711
- (25) **Inversion for the internal structure of an evolved small mass star using modes with $\ell = 0-3$,**
I. W. Roxburgh, N. Audard, Sarbani Basu, J. Christensen-Dalsgaard, S. V. Vorontsov, 1997 in proceedings of *IAU Symp. 181: Sounding Solar and Stellar Interiors, posters volume*, eds. J. Provost, F.-X. Schmider, Nice Observatory, 245

- (24) **Comparison of predicted p-mode frequencies with preliminary GOLF results**
S. Turck-Chièze, S. Basu, J. Christensen-Dalsgaard, A. Eff Darwich, M. Gabriel, C. J. Henney, A. G. Kosovichev, I. Lopes, L. Paternò, J. Provost, R. K. Ulrich and the GOLF team, 1997 in proceedings of *IAU Symp. 181: Sounding Solar and Stellar Interiors, posters volume*, eds. J. Provost, F.-X. Schmider, Nice Observatory, 131
- (23) **Helioseismic determination of opacity corrections**
S. C. Tripathy, Sarbani Basu and J. Christensen-Dalsgaard, 1997 in proceedings of *IAU Symp. 181: Sounding Solar and Stellar Interiors, posters volume*, eds. J. Provost, F.-X. Schmider, Nice Observatory, 129
- (22) **Effects of equation of state on helioseismic inversions,**
Sarbani Basu and J. Christensen-Dalsgaard, 1997 in proceedings of *IAU Symp. 181: Sounding Solar and Stellar Interiors, posters volume*, eds. J. Provost, F.-X. Schmider, Nice Observatory, 65
- (21) **Solar internal sound speed as inferred from combined BiSON and LOWL oscillation frequencies**
Sarbani Basu, W. J. Chaplin, J. Christensen-Dalsgaard, Y. Elsworth, G. R. Isaak, R. New, J. Schou, M. J. Thompson and S. Tomczyk 1997 in proceedings of *IAU Symp. 181: Sounding Solar and Stellar Interiors, posters volume*, eds. J. Provost, F.-X. Schmider, Nice Observatory, 63
- (20) **Structure inversions hare-and-hounds,**
H. M. Antia, Sarbani Basu, J. Christensen-Dalsgaard, J. R. Elliott, D. O. Gough, J. A. Guzik and A. G. Kosovichev, 1997 in proceedings of *IAU Symp. 181: Sounding Solar and Stellar Interiors, posters volume*, eds. J. Provost, F.-X. Schmider, Nice Observatory, 61
- (19) **Internal Structure and Rotation of the Sun: First results from the MDI data**
A. G. Kosovichev, J. Schou, P. H. Scherrer, R. S. Bogart, R. I. Bush, J. T. Hoeksema, J. Aloise, L. Bacon, A. Burnette, C. De Forest, P. M. Giles, K. Leibbrand, R. Nigam, M. Rubin, K. Scott, S. D. Williams, Sarbani Basu, J. Christensen-Dalsgaard, W. Däppen, E. J. Rhodes, Jr., T. L. Duvall, Jr., 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, 1997, in proceedings of *IAU Symp. 181: Sounding Solar and Stellar Interiors*, eds. J. Provost, F.-X. Schmider, Kluwer, Dordrecht, 203
- (18) **The seismic structure of the Sun from GONG**
E. Anderson, H. M. Antia, S. Basu, B. Chaboyer, S. M. Chitre, J. Christensen-Dalsgaard, W. A. Dziembowski, A. Eff-Darwich, J. R. Elliott, P. M. Giles, D. O. Gough, J. A. Guzik, J. W. Harvey, F. Hill, J. W. Leibacher, A. G. Kosovichev, M. J. P. F. G. Monteiro, O. Richard, T. Sekii, H. Shibahashi, M. Takata, M. J. Thompson, J. Toomre, S. Vauclair and S. V. Vorontsov, 1997, in proceedings of *IAU Symp. 181: Sounding Solar and Stellar Interiors*, eds. J. Provost, F.-X. Schmider, Kluwer, Dordrecht, 151
- (17) **The Seismic Sun (invited review),**
Sarbani Basu, 1997 in proceedings of *IAU Symp. 181: Sounding Solar and Stellar Interiors*, eds. J. Provost, F.-X. Schmider, Kluwer, Dordrecht, 137
- (16) **Effect of turbulent pressure on solar oscillation frequencies,**
H. M. Antia and Sarbani Basu, 1996, in proceedings of *Solar Convection and Oscillations and their Relationship*, eds. F. P. Pijpers, J. Christensen-Dalsgaard and C. Rosenthal, Kluwer, Dordrecht, 51
- (15) **Filtering in Inversion for Solar Internal Structure,**
Sarbani Basu, J. Christensen-Dalsgaard, F. Pérez Hernández and M. J. Thompson, 1996, in *Inverse Methods: Proceedings of the Interdisciplinary Inversion Conference*, eds. K. Mosegaard, P. Sibani, B. H. Jacobsen, Lecture Notes in Earth Sciences (Springer), Vol. 63, p. 32

- (14) **Solar Structure as Revealed by 1 Year LOWL Data**
Sarbani Basu, J. Christensen-Dalsgaard, J. Schou, M. J. Thompson, S. Tomczyk, 1996, in *Proc. "Windows on the Sun's Interior"*, *Bull. Astron. Soc. India*, **24**, 147
- (13) **Helio- and Asteroseismology**
Sarbani Basu in Däppen, W., 1995, *Highlights of Astronomy*, **10**, 319
- (12) **Interior Structure and Inversions (Working Group Report)**,
A. G. Kosovichev, Sarbani Basu, J. Christensen-Dalsgaard, A. Eff-Darwich, D. O. Gough, C. A. Iglesias, F. Pérez-Hernández, F. Rogers, T. Sekii, H. Shibahashi, 1995, in *Helioseismology: Proc. of the 4th SOHO workshop, Vol. 1*, eds. J. T. Hoeksema, V. Domingo, B. Fleck, B. Battrick, ESA SP-376, ESTEC, Noordwijk, 211
- (11) **Helium Abundance in the Solar Envelope**,
Sarbani Basu and H. M. Antia, 1995, in *Helioseismology: Proc. of the 4th SOHO workshop, Vol. 2*, eds. J. T. Hoeksema, V. Domingo, B. Fleck, B. Battrick, ESA SP-376, ESTEC, Noordwijk, 35
- (10) **Solar structure inversion Using LOWL data**,
Sarbani Basu, J. Christensen-Dalsgaard, J. Schou, M. J. Thompson, S. Tomczyk, 1995, in *Helioseismology: Proc. of the 4th SOHO workshop, Vol. 2*, eds. J. T. Hoeksema, V. Domingo, B. Fleck, B. Battrick, ESA SP-376, ESTEC, Noordwijk, 25
- (9) **Helioseismic Test of Stellar Convection Theories**,
Sarbani Basu and H. M. Antia, 1995, in *GONG'94: Helio- and Asteroseismology from Earth and Space, A. S. P. Conference Series*, eds. R. K. Ulrich, E. J. Rhodes, W. Däppen, **76**, 649
- (8) **A Self-Consistent Approach to Filtering Out Near-Surface Uncertainties from Helioseismic Inversions**
Sarbani Basu, M. J. Thompson, J. Christensen-Dalsgaard, F. Pérez Hernández, 1995, in *GONG'94: Helio- and Asteroseismology from Earth and Space, A. S. P. Conference Series*, eds. R. K. Ulrich, E. J. Rhodes, W. Däppen, **76**, 152
- (7) **On Constructing Seismic Models of the Sun's Radial Structure**,
Sarbani Basu and M. J. Thompson, 1995, in *GONG'94: Helio- and Asteroseismology from Earth and Space, A. S. P. Conference Series*, eds. R. K. Ulrich, E. J. Rhodes, W. Däppen, **76**, 148
- (6) **Helioseismic determination of sound speed in the Sun**
S. Basu and H. M. Antia, 1995, in *J. Astrophys. Astron.*, **16** suppl., 392
- (5) **Helioseismic Detection of Overshoot Below the Solar Convection Zone**,
Sarbani Basu, H. M. Antia and D. Narasimha, 1994, in *Proceedings of the 15th Meeting of the Astronomical Society of India*, *Bull. Astron. Soc. India*, **21**, 669
- (4) **The Spatial and Temporal Evolution of Gas and Heavy Elements in the Galaxy**,
Sarbani Basu, 1994, in *Proceedings of the 15th Meeting of the Astronomical Society of India*, *Bull. Astron. Soc. India*, **21**, 361
- (3) **The Infall Time-Scale in the Solar Neighbourhood**,
Sarbani Basu, 1994, in *Proceedings of the 15th Meeting of the Astronomical Society of India*, *Bull. Astron. Soc. India*, **21**, 583
- (2) **The Effect of Stellar Multiplicities on the IMF and Global Star Formation Rates**,
Sarbani Basu and N. C. Rana, 1992, in *Star Formation, Galaxies and the Interstellar Medium*, ed. J. Franco, F. Ferrini, G. Tenorio-Tagle, (Cambridge Univ. Press, Cambridge), p298
- (1) **G-Dwarf Problem and the Gas Metallicity Relation**,
N. C. Rana and Sarbani Basu, 1990, in *Chemical and Dynamical Evolution of Galaxies*, eds. F. Ferrini, J. Franco, F. Matteucci (isa: ETS), 612.