

Douglas Gough

List of Publications by Year in descending order

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135
papers

9,009
citations

57631

44
h-index

42291

92
g-index

140
all docs

140
docs citations

140
times ranked

2406
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|------|-----------|
| 1 | The Current State of Solar Modeling. <i>Science</i> , 1996, 272, 1286-1292. | 6.0 | 957 |
| 2 | Helioseismic Studies of Differential Rotation in the Solar Envelope by the Solar Oscillations Investigation Using the Michelson Doppler Imager. <i>Astrophysical Journal</i> , 1998, 505, 390-417. | 1.6 | 816 |
| 3 | Solar interior structure and luminosity variations. <i>Solar Physics</i> , 1981, 74, 21-34. | 1.0 | 638 |
| 4 | Differential Rotation and Dynamics of the Solar Interior. <i>Science</i> , 1996, 272, 1300-1305. | 6.0 | 326 |
| 5 | Inevitability of a magnetic field in the Sun's radiative interior. <i>Nature</i> , 1998, 394, 755-757. | 13.7 | 318 |
| 6 | The depth of the solar convection zone. <i>Astrophysical Journal</i> , 1991, 378, 413. | 1.6 | 301 |
| 7 | Helioseismology: Oscillations as a Diagnostic of the Solar Interior. <i>Annual Review of Astronomy and Astrophysics</i> , 1984, 22, 593-619. | 8.1 | 258 |
| 8 | VIRGO: Experiment for helioseismology and solar irradiance monitoring. <i>Solar Physics</i> , 1995, 162, 101-128. | 1.0 | 256 |
| 9 | Internal rotation of the Sun. <i>Nature</i> , 1984, 310, 22-25. | 13.7 | 241 |
| 10 | STRUCTURE AND ROTATION OF THE SOLAR INTERIOR: INITIAL RESULTS FROM THE MDI MEDIUM-L PROGRAM. <i>Solar Physics</i> , 1997, 170, 43-61. | 1.0 | 239 |
| 11 | The Seismic Structure of the Sun. <i>Science</i> , 1996, 272, 1296-1300. | 6.0 | 210 |
| 12 | Speed of sound in the solar interior. <i>Nature</i> , 1985, 315, 378-382. | 13.7 | 209 |
| 13 | Title is missing!. <i>Solar Physics</i> , 1997, 170, 1-25. | 1.0 | 195 |
| 14 | Mixing-length theory for pulsating stars. <i>Astrophysical Journal</i> , 1977, 214, 196. | 1.6 | 177 |
| 15 | The Solar Spoon. <i>Nature</i> , 1972, 240, 262-264. | 13.7 | 176 |
| 16 | The effect of rotation and a buried magnetic field on stellar oscillations. <i>Monthly Notices of the Royal Astronomical Society</i> , 1990, 242, 25-55. | 1.6 | 159 |
| 17 | On the excitation mechanism in roAp stars. <i>Monthly Notices of the Royal Astronomical Society</i> , 2001, 323, 362-372. | 1.6 | 147 |
| 18 | The Calibration of Stellar Convection Theories. <i>Monthly Notices of the Royal Astronomical Society</i> , 1976, 176, 589-607. | 1.6 | 132 |

| # | ARTICLE | IF | CITATIONS |
|----|--|------|-----------|
| 19 | The Influence of a Magnetic Field on Schwarzschild's Criterion for Convective Instability in an Ideally Conducting Fluid. <i>Monthly Notices of the Royal Astronomical Society</i> , 1966, 133, 85-98. | 1.6 | 127 |
| 20 | An asteroseismic signature of helium ionization. <i>Monthly Notices of the Royal Astronomical Society</i> , 2007, 375, 861-880. | 1.6 | 126 |
| 21 | Is the Sun helium-deficient?. <i>Nature</i> , 1980, 288, 544-547. | 13.7 | 110 |
| 22 | Magnetic perturbations to the acoustic modes of roAp stars. <i>Monthly Notices of the Royal Astronomical Society</i> , 2000, 319, 1020-1038. | 1.6 | 104 |
| 23 | Inverting helioseismic data. <i>Solar Physics</i> , 1985, 100, 65-99. | 1.0 | 102 |
| 24 | The Stability of a Solar Model to Non-Radial Oscillations. <i>Monthly Notices of the Royal Astronomical Society</i> , 1974, 169, 429-445. | 1.6 | 99 |
| 25 | Seismic Observations of the Solar Interior. <i>Annual Review of Astronomy and Astrophysics</i> , 1991, 29, 627-685. | 8.1 | 99 |
| 26 | On the interpretation of five-minute oscillations in solar spectrum line shifts. <i>Monthly Notices of the Royal Astronomical Society</i> , 1982, 198, 141-171. | 1.6 | 95 |
| 27 | The quest for the solar g modes. <i>Astronomy and Astrophysics Review</i> , 2010, 18, 197-277. | 9.1 | 92 |
| 28 | Calibration of the Thickness of the Solar Tachocline. <i>Astrophysical Journal</i> , 1999, 516, 475-481. | 1.6 | 90 |
| 29 | Slow rotation of the Sun's interior. <i>Nature</i> , 1995, 376, 669-672. | 13.7 | 88 |
| 30 | On model predictions of the power spectral density of radial solar p modes. <i>Monthly Notices of the Royal Astronomical Society</i> , 2005, 360, 859-868. | 1.6 | 86 |
| 31 | Sources of uncertainty in direct seismological measurements of the solar helium abundance. <i>Monthly Notices of the Royal Astronomical Society</i> , 1992, 259, 536-558. | 1.6 | 83 |
| 32 | Modal equations for cellular convection. <i>Journal of Fluid Mechanics</i> , 1975, 68, 695-719. | 1.4 | 80 |
| 33 | Towards a heliological inverse problem. <i>Nature</i> , 1976, 259, 89-92. | 13.7 | 74 |
| 34 | Differential asymptotic sound-speed inversions. <i>Monthly Notices of the Royal Astronomical Society</i> , 1989, 238, 481-502. | 1.6 | 74 |
| 35 | Modelling pulsation amplitudes of α Hydræ. <i>Monthly Notices of the Royal Astronomical Society</i> , 2002, 336, L65-L69. | 1.6 | 70 |
| 36 | Prospects for Measuring Differential Rotation in White Dwarfs through Asteroseismology. <i>Astrophysical Journal</i> , 1999, 516, 349-365. | 1.6 | 67 |

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|----|--|------|-----------|
| 37 | Effluent stellar pulsation. <i>Astrophysical Journal</i> , 1990, 362, 256. | 1.6 | 65 |
| 38 | Weakly interacting massive particles and solar oscillations. <i>Nature</i> , 1986, 321, 226-229. | 13.7 | 64 |
| 39 | Numerical solutions of single-mode convection equations. <i>Journal of Fluid Mechanics</i> , 1977, 79, 1-31. | 1.4 | 62 |
| 40 | Perspectives in Helioseismology. <i>Science</i> , 1996, 272, 1281-1283. | 6.0 | 58 |
| 41 | A new measure of the solar rotation. <i>Monthly Notices of the Royal Astronomical Society</i> , 1981, 196, 731-745. | 1.6 | 57 |
| 42 | Seismological measurement of stellar ages. <i>Nature</i> , 1987, 326, 257-259. | 13.7 | 56 |
| 43 | Internal rotation and gravitational quadrupole moment of the Sun. <i>Nature</i> , 1982, 298, 334-339. | 13.7 | 55 |
| 44 | Structural changes to the Sun through the solar cycle. <i>Monthly Notices of the Royal Astronomical Society</i> , 1996, 278, 437-448. | 1.6 | 50 |
| 45 | Temporal variations in the Sun's rotational kinetic energy. <i>Astronomy and Astrophysics</i> , 2008, 477, 657-663. | 2.1 | 50 |
| 46 | An elementary introduction to the JWKB approximation. <i>Astronomische Nachrichten</i> , 2007, 328, 273-285. | 0.6 | 44 |
| 47 | A new inversion for the hydrostatic stratification of the sun. , 1991, , 111-120. | | 44 |
| 48 | Asymptotic Sound-Speed Inversions. , 1986, , 125-140. | | 41 |
| 49 | Sensitivity of five minute eigenfrequencies to the structure of the sun. , 1980, , 307-312. | | 40 |
| 50 | Seismology of the solar envelope: sound-speed gradient in the convection zone and its diagnosis of the equation of state. <i>Monthly Notices of the Royal Astronomical Society</i> , 2000, 316, 71-83. | 1.6 | 38 |
| 51 | The current state of stellar mixing-length theory. , 1977, , 15-56. | | 37 |
| 52 | How Oblate Is the Sun?. <i>Science</i> , 2012, 337, 1611-1612. | 6.0 | 35 |
| 53 | An introduction to the solar tachocline. , 2007, , 3-30. | | 34 |
| 54 | On the seismic age and heavy-element abundance of the Sun. <i>Monthly Notices of the Royal Astronomical Society</i> , 2011, 418, 1217-1230. | 1.6 | 34 |

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|----|--|------|-----------|
| 55 | Seismology of the solar envelope: measuring the acoustic phase shift generated in the outer layers. Monthly Notices of the Royal Astronomical Society, 1995, 273, 573-582. | 1.6 | 33 |
| 56 | Our first inferences from helioseismology. Physics Bulletin, 1983, 34, 502-507. | 0.0 | 32 |
| 57 | Sensitivity of solar eigenfrequencies to the age of the sun. Solar Physics, 1990, 128, 143-160. | 1.0 | 32 |
| 58 | On the Implications of the Symmetric Component of the Frequency Splitting Reported by Duvall, Harvey and Pomerantz. , 1988, , 175-180. | | 26 |
| 59 | Time-dependent solutions of multimode convection equations. Journal of Fluid Mechanics, 1982, 125, 99. | 1.4 | 25 |
| 60 | HELIOSEISMIC DETECTION OF DEEP MERIDIONAL FLOW. Astrophysical Journal, 2010, 714, 960-970. | 1.6 | 25 |
| 61 | Mixing-length theory and the excitation of solar acoustic oscillations. Solar Physics, 1990, 128, 161-193. | 1.0 | 22 |
| 62 | Using Helioseismic Data to Probe the Hydrogen Abundance in the Solar Core. Astrophysics and Space Science Library, 1990, , 327-340. | 1.0 | 22 |
| 63 | Evidence for an oblique magnetic solar rotator. Nature, 1982, 298, 350-354. | 13.7 | 19 |
| 64 | On the hydrostatic stratification of the solar tachocline. Monthly Notices of the Royal Astronomical Society, 2018, 477, 3845-3852. | 1.6 | 18 |
| 65 | What Have We Learned from Helioseismology, What Have We Really Learned, and What Do We Aspire to Learn?. Solar Physics, 2013, 287, 9-41. | 1.0 | 16 |
| 66 | Magnetic Perturbations to Stellar Oscillation Eigenfrequencies. , 1988, , 155-160. | | 16 |
| 67 | Sizing up the Sun. Nature, 2001, 410, 313-314. | 13.7 | 15 |
| 68 | Stellar structure: Beginnings of asteroseismology. Nature, 1985, 314, 14-15. | 13.7 | 14 |
| 69 | Constrained estimates of low-degree mode frequencies and the determination of the interior structure of the Sun. Solar Physics, 1995, 157, 1-15. | 1.0 | 14 |
| 70 | TESTING SOLAR MODELS: THE INVERSE PROBLEM. , 1996, , 141-230. | | 14 |
| 71 | Nonradial and nonlinear stellar pulsation. Nature, 1979, 278, 685-686. | 13.7 | 13 |
| 72 | The power of helioseismology to address issues of fundamental physics. AIP Conference Proceedings, 2004, , . | 0.3 | 13 |

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|----|---|------|-----------|
| 73 | Inferring Spatial Variation of Solar Properties from Helioseismic Data. <i>Astrophysical Journal</i> , 1996, 459, 779. | 1.6 | 13 |
| 74 | Single-mode theory of diffusive layers in thermohaline convection. <i>Journal of Fluid Mechanics</i> , 1982, 125, 75. | 1.4 | 12 |
| 75 | An upper bound to the periods of radial pulsation of the Sun. <i>Monthly Notices of the Royal Astronomical Society</i> , 1983, 203, 165-179. | 1.6 | 12 |
| 76 | Gravity waves with a new spin. <i>Nature</i> , 1997, 388, 324-325. | 13.7 | 12 |
| 77 | On the Principal Asteroseismic Diagnostic Signatures. <i>Astrophysics and Space Science</i> , 2003, 284, 165-185. | 0.5 | 11 |
| 78 | Variability in mode amplitudes in the rapidly oscillating Ap star HRâ€f1217. <i>Monthly Notices of the Royal Astronomical Society</i> , 2011, 415, 1638-1646. | 1.6 | 11 |
| 79 | Is the Sun a Magnet?. <i>Solar Physics</i> , 2017, 292, 1. | 1.0 | 11 |
| 80 | A Critical Evaluation of Recent Claims Concerning Solar Rotation. <i>Astrophysical Journal</i> , 2019, 877, 42. | 1.6 | 11 |
| 81 | Shaky clues to solar activity. <i>Nature</i> , 1990, 345, 768-769. | 13.7 | 10 |
| 82 | On the effect of error correlation on linear inversions. <i>Monthly Notices of the Royal Astronomical Society</i> , 2002, 335, 170-176. | 1.6 | 10 |
| 83 | Some Glimpses from Helioseismology at the Dynamics of the Deep Solar Interior. <i>Space Science Reviews</i> , 2015, 196, 15-47. | 3.7 | 10 |
| 84 | Solar structure: A bridge in a gap in solar oscillations. <i>Nature</i> , 1983, 302, 18-18. | 13.7 | 9 |
| 85 | Geminga and the 160-min solar oscillation. <i>Nature</i> , 1984, 308, 160-162. | 13.7 | 9 |
| 86 | Deep roots of solar cycles. <i>Nature</i> , 1988, 336, 618-619. | 13.7 | 9 |
| 87 | Seismic Constraints on the Solar Neutrino Problem. <i>Annals of the New York Academy of Sciences</i> , 1991, 647, 199-217. | 1.8 | 9 |
| 88 | Towards Understanding Solar Convection and Activity â€œ (Invited Review). , 2000, 192, 3-26. | | 9 |
| 89 | Progress report on solar age calibration. <i>Proceedings of the International Astronomical Union</i> , 2008, 4, 149-156. | 0.0 | 9 |
| 90 | Pattern formation in rapidly oscillating peculiar A stars. <i>Geophysical and Astrophysical Fluid Dynamics</i> , 2012, 106, 429-449. | 0.4 | 9 |

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|-----|--|------|-----------|
| 91 | ASTRONOMY: Enhanced: The Birth of Asteroseismology. Science, 2001, 291, 2325-2327. | 6.0 | 9 |
| 92 | Climate and variability in the solar constant. Nature, 1980, 288, 639-640. | 13.7 | 8 |
| 93 | The Effect of the Solar Cycle on the Resonant Coupling of g Modes. International Astronomical Union Colloquium, 2000, 176, 390-390. | 0.1 | 8 |
| 94 | Some recent and future helioseismological inferences concerning the solar convection zone. Proceedings of the International Astronomical Union, 2010, 6, 3-14. | 0.0 | 8 |
| 95 | Seiches in supergranules. Nature, 1976, 264, 424-426. | 13.7 | 7 |
| 96 | Seismic consequence of the Shoemaker-Levy impact. Monthly Notices of the Royal Astronomical Society, 1994, 269, L17-L20. | 1.6 | 7 |
| 97 | Waves in the wind. Nature, 1995, 376, 120-121. | 13.7 | 7 |
| 98 | On the magnetic field required for driving the observed angular-velocity variations in the solar convection zone. Monthly Notices of the Royal Astronomical Society, 2013, 428, 470-475. | 1.6 | 7 |
| 99 | On the Composition of the Solar Interior Rapporteur Paper I. Space Science Reviews, 1998, 85, 141-158. | 3.7 | 6 |
| 100 | Anticipating the Sun's heavy-element abundance. Monthly Notices of the Royal Astronomical Society: Letters, 2019, 485, L114-L115. | 1.2 | 6 |
| 101 | Helioseismology: Oscillations as a probe of the Sun's interior. Nature, 1983, 304, 689-690. | 13.7 | 5 |
| 102 | Solar physics: What causes the solar cycle?. Nature, 1986, 319, 263-264. | 13.7 | 5 |
| 103 | Prediction of solar oscillation frequencies. Nature, 1988, 336, 720-720. | 13.7 | 5 |
| 104 | Solar oscillation. Nature, 1989, 338, 384-384. | 13.7 | 5 |
| 105 | Commentary on a putative magnetic field variation in the solar convection zone. Monthly Notices of the Royal Astronomical Society, 2013, 435, 3148-3158. | 1.6 | 5 |
| 106 | Stoked nondynamo: sustaining field in magnetically non-closed systems. New Journal of Physics, 2014, 16, 083002. | 1.2 | 5 |
| 107 | Sounding solar and stellar interiors: Conclusions and prospects. Symposium - International Astronomical Union, 1997, 181, 397-424. | 0.1 | 4 |
| 108 | Free energy of a screened ion pair. Journal of Mathematical Physics, 2000, 41, 260-283. | 0.5 | 4 |

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|-----|--|------|-----------|
| 109 | On Estimating Fluxes due to Small-Scale Turbulent Convection in a Rotating Star. <i>ISRN Astronomy and Astrophysics</i> , 2012, 2012, 1-10. | 0.2 | 4 |
| 110 | Towards a helioseismic calibration of the equation of state in the solar convective envelope. , 1994, , 545-549. | | 3 |
| 111 | Structure inversions with the VIRGO data. <i>Symposium - International Astronomical Union</i> , 1997, 181, 159-166. | 0.1 | 3 |
| 112 | Angular-Momentum Coupling Through the Tachocline. <i>Thirty Years of Astronomical Discovery With UKIRT</i> , 2010, , 68-85. | 0.3 | 3 |
| 113 | Open Questions. <i>Astrophysics and Space Science Library</i> , 1990, , 451-475. | 1.0 | 3 |
| 114 | Structure and Rotation of the Solar Interior: Initial Results from the MDI Medium-L Program. , 1997, , 43-61. | | 3 |
| 115 | Using Helioseismic Data to Probe the Hydrogen Abundance in the Solar Core. <i>International Astronomical Union Colloquium</i> , 1990, 121, 327-340. | 0.1 | 3 |
| 116 | New data from solar oscillations. <i>Nature</i> , 1978, 274, 739-739. | 13.7 | 2 |
| 117 | Problems with solar oscillations. <i>Nature</i> , 1981, 293, 703-704. | 13.7 | 2 |
| 118 | What can we Learn from Oscillation Studies about Irradiance and Radius Changes?. <i>International Astronomical Union Colloquium</i> , 1994, 143, 252-263. | 0.1 | 2 |
| 119 | Towards A Helioseismic Calibration of The Equation of State of The Plasma in The Solar Convective Envelope. <i>International Astronomical Union Colloquium</i> , 1994, 147, 545-549. | 0.1 | 1 |
| 120 | Excitation Mechanism in roAp Stars. <i>International Astronomical Union Colloquium</i> , 2000, 176, 453-454. | 0.1 | 1 |
| 121 | Solar Neutrino Production. <i>Annales Henri Poincare</i> , 2003, 4, 303-317. | 0.8 | 1 |
| 122 | What we need to know about the Sun. <i>Proceedings of the International Astronomical Union</i> , 2004, 2004, 723. | 0.0 | 1 |
| 123 | Modelling turbulent fluxes due to thermal convection in rectilinear shearing flow. <i>Proceedings of the International Astronomical Union</i> , 2010, 6, 397-398. | 0.0 | 1 |
| 124 | Some Glimpses from Helioseismology at the Dynamics of the Deep Solar Interior. <i>Space Sciences Series of ISSI</i> , 2017, , 21-53. | 0.0 | 1 |
| 125 | On the Detection of Subphotospheric Convective Velocities and Temperature Fluctuations. <i>International Astronomical Union Colloquium</i> , 1983, 66, 401-410. | 0.1 | 0 |
| 126 | Solar equatorial rotation rate inferred from inversion of frequency splitting of high-degree modes. <i>Symposium - International Astronomical Union</i> , 1988, 123, 45-48. | 0.1 | 0 |

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|-----|---|-----|-----------|
| 127 | Helium diffusion in rapidly oscillating Ap stars. Symposium - International Astronomical Union, 1988, 123, 291-294. | 0.1 | 0 |
| 128 | Do solar models with weakly interacting massive particles reproduce the Stanford seismic data?. Symposium - International Astronomical Union, 1988, 123, 111-114. | 0.1 | 0 |
| 129 | Open Questions. International Astronomical Union Colloquium, 1990, 121, 451-475. | 0.1 | 0 |
| 130 | Some Remarks on Stellar Pulsation. International Astronomical Union Colloquium, 2000, 176, 528-537. | 0.1 | 0 |
| 131 | The New Era in Helioseismology. Symposium - International Astronomical Union, 2001, 203, 3-20. | 0.1 | 0 |
| 132 | Towards a Generalization of a Mixing-length Model for Nonradially Pulsating Stars: Convection in a Shear. Symposium - International Astronomical Union, 2001, 203, 115-117. | 0.1 | 0 |
| 133 | A personal view of the scientific career of Wojtek Dziembowski (perceived by an admirer from abroad). Proceedings of the International Astronomical Union, 2013, 9, 3-14. | 0.0 | 0 |
| 134 | Solar Neutrino Production. , 2003, , 303-317. | | 0 |
| 135 | What Have We Learned from Helioseismology, What Have We Really Learned, and What Do We Aspire to Learn?. , 2012, , 9-41. | | 0 |