

# Benjamin J Mccall

## List of Publications by Year in descending order

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98  
papers

4,669  
citations

117571

34  
h-index

98753

67  
g-index

98  
all docs

98  
docs citations

98  
times ranked

2929  
citing authors

| #  | ARTICLE   | IF   | CITATIONS |
|----|---|------|-----------|
| 1  | Diffuse Atomic and Molecular Clouds. Annual Review of Astronomy and Astrophysics, 2006, 44, 367-414.  | 8.1  | 452       |
| 2  | An enhanced cosmic-ray flux towards $\uparrow$ Persei inferred from a laboratory study of the $H_3^+$ recombination rate. Nature, 2003, 422, 500-502.   | 13.7 | 300       |
| 3  | INVESTIGATING THE COSMIC-RAY IONIZATION RATE IN THE GALACTIC DIFFUSE INTERSTELLAR MEDIUM THROUGH OBSERVATIONS OF $H^{+}_{3}$ . Astrophysical Journal, 2012, 745, 91.  | 1.6  | 274       |
| 4  | documentclass{aastex} usepackage{amsmath} usepackage{amssymb} usepackage{bm} usepackage{mathrsfs} usepackage{pifont} usepackage{stmaryrd} usepackage{textcomp} usepackage{portland,xspace} usepackage{amsmath,amsxtra} usepackage[OT2,OT1]{fontenc} ewcommandcyr{enewcommandmdefault{wncyr}enewcommandsfdefault{wncyss}enewcommandencodingdefault{OT2}ormalfontselectfont} DeclareTextFontCommand{extcyr}{cyr} pagestyle{empty} DeclareMathSizes{10}{9}{7}{6} egin{A      | 1.6  | 217       |
| 5  | A Catalog of Diffuse Interstellar Bands in the Spectrum of HD 204827. Astrophysical Journal, 2008, 680, 1256-1270.  | 1.6  | 214       |
| 6  | STUDIES OF THE DIFFUSE INTERSTELLAR BANDS. III. HD 183143. Astrophysical Journal, 2009, 705, 32-45.   | 1.6  | 199       |
| 7  | Detection of $H_3^+$ in the Diffuse Interstellar Medium Toward Cygnus OB2 No. 12&nbsp;. Science, 1998, 279, 1910-1913.  | 6.0  | 189       |
| 8  | Hot and Diffuse Clouds near the Galactic Center Probed by Metastable documentclass{aastex} usepackage{amsmath} usepackage{amssymb} usepackage{bm} usepackage{mathrsfs} usepackage{pifont} usepackage{stmaryrd} usepackage{textcomp} usepackage{portland,xspace} usepackage{amsmath,amsxtra} usepackage[OT2,OT1]{fontenc} ewcommandcyr{enewcommandmdefault{wncyr}enewcommandsfdefault{wncyss}enewcommandencodingdefault{OT2}ormalfontselectfont} DeclareTextFontCommand{e. | 1.6  | 172       |
| 9  | STUDIES OF DIFFUSE INTERSTELLAR BANDS V. PAIRWISE CORRELATIONS OF EIGHT STRONG DIBs AND NEUTRAL HYDROGEN, MOLECULAR HYDROGEN, AND COLOR EXCESS. Astrophysical Journal, 2011, 727, 33.   | 1.6  | 141       |
| 10 | Comprehensive Evaluation and Compilation of $H_3^+$ Spectroscopy. Journal of Molecular Spectroscopy, 2001, 210, 60-83.  | 0.4  | 140       |
| 11 | Observations of $H^{+}_{3}$ documentclass{aastex} usepackage{amsmath} usepackage{amssymb} usepackage{bm} usepackage{mathrsfs} usepackage{pifont} usepackage{stmaryrd} usepackage{textcomp} usepackage{portland,xspace} usepackage{amsmath,amsxtra} usepackage[OT2,OT1]{fontenc} ewcommandcyr{enewcommandmdefault{wncyr}enewcommandsfdefault{wncyss}enewcommandencodingdefault{OT2}ormalfontselectfont} DeclareTextFontCommand{extcyr}                                     | 1.6  | 138       |
| 12 | Some Diffuse Interstellar Bands Related to Interstellar $C_2$ Molecules. Astrophysical Journal, 2003, 584, 339-356.   | 1.6  | 135       |
| 13 | THE IMPLICATIONS OF A HIGH COSMIC-RAY IONIZATION RATE IN DIFFUSE INTERSTELLAR CLOUDS. Astrophysical Journal, 2009, 694, 257-267.  | 1.6  | 86        |
| 14 | Observations of $C_3$ in Translucent Sight Lines. Astrophysical Journal, 2003, 582, 823-829.  | 1.6  | 78        |
| 15 | Absorption Line Survey of $H^{+}_{3}$ toward the Galactic Center Sources. II. Eight Infrared Sources within 30 pc of the Galactic Center. Astrophysical Journal, 2008, 688, 306-319.  | 1.6  | 77        |
| 16 | STUDIES OF THE DIFFUSE INTERSTELLAR BANDS. IV. THE NEARLY PERFECT CORRELATION BETWEEN $\lambda_{6196.0}$ AND $\lambda_{6613.6}$ . Astrophysical Journal, 2010, 708, 1628-1638.  | 1.6  | 75        |
| 17 | INVESTIGATING THE COSMIC-RAY IONIZATION RATE NEAR THE SUPERNOVA REMNANT IC 443 THROUGH $H^{+}_{3}$ OBSERVATIONS,. Astrophysical Journal, 2010, 724, 1357-1365.  | 1.6  | 72        |
| 18 | MOLECULAR SPECTROSCOPY: $H_3^+$ —an Ion with Many Talents. Science, 2000, 287, 1941-1942.   | 6.0  | 68        |

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|----|--|------|-----------|
| 19 | ON THE ORTHOPARA RATIO OF $H_3$ IN DIFFUSE MOLECULAR CLOUDS. <i>Astrophysical Journal</i> , 2011, 729, 15.   | 1.6  | 67        |
| 20 | Producing and quantifying enriched $H_2$ . <i>Review of Scientific Instruments</i> , 2009, 80, 016108.   | 0.6  | 62        |
| 21 | The Central 300 pc of the Galaxy Probed by Infrared Spectra of $H_2$ and CO. I. Predominance of Warm and Diffuse Gas and High $H_2$ Ionization Rate. <i>Astrophysical Journal</i> , 2019, 883, 54.   | 1.6  | 56        |
| 22 | Absorption Line Survey of $H_3^+$ toward the Galactic Center Sources I. GCS 3-2 and GC IRS3. <i>Publication of the Astronomical Society of Japan</i> , 2002, 54, 951-961.  | 1.0  | 55        |
| 23 | OBSERVATIONAL RESULTS OF A MULTI-TELESCOPE CAMPAIGN IN SEARCH OF INTERSTELLAR UREA $[(NH_2)_2CO]$ . <i>Astrophysical Journal</i> , 2014, 783, 77.  | 1.6  | 55        |
| 24 | Observations of Rotationally Resolved $C_3$ in Translucent Sight Lines. <i>Astrophysical Journal</i> , 2003, 595, 235-246.   | 1.6  | 48        |
| 25 | High-resolution storage-ring measurements of the dissociative recombination of $H_3^+$ as a supersonic expansion ion source. <i>Physical Review A</i> , 2010, 82.  | 1.0  | 48        |
| 26 | Rejection of the $C[F][F]^{[SUP]7}[/INF][F]$ Diffuse Interstellar Band Hypothesis. <i>Astrophysical Journal</i> , 2001, 559, L49-L53.  | 1.6  | 45        |
| 27 | Temperature Dependence of Two Key Interstellar Reactions of $H_3^+ + O_3$ and $CO + H_3^+$ . <i>Journal of Physical Chemistry A</i> , 2010, 114, 278-290.  | 1.1  | 44        |
| 28 | Near-infrared spectroscopy of $H_3^+$ above the barrier to linearity. <i>Journal of Chemical Physics</i> , 2003, 118, 10890-10899.   | 1.2  | 41        |
| 29 | Disclosing Identities in Diffuse Interstellar Bands. <i>Science</i> , 2011, 331, 293-294.  | 6.0  | 39        |
| 30 | The Interstellar Medium of IRAS 08572+3915 NW: documentclass{aastex} usepackage{amssymb} usepackage{amsfonts} usepackage{amsmath} usepackage{mathrsfs} usepackage{pifont} usepackage{stmaryrd} usepackage{textcomp} usepackage{portland,xspace} usepackage{amsmath,amsxtra} usepackage[OT2,OT1]{fontenc} ewcommandcyr{enewcommandmdefault{wncyr} anewcommandsfdefault{wncyss} anewcommandencodingdefault{OT2} ormalfont selectfont} DeclareTextFontCommand{extcyr} | 1.6  | 37        |
| 31 | On the discovery of the diffuse interstellar bands. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2013, 469, 20120604.  | 1.0  | 37        |
| 32 | Dissociative recombination of cold $H_3^+$ and its interstellar implications. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2006, 364, 2953-2963.   | 1.6  | 35        |
| 33 | The dissociative recombination of $H_3^+$ "a saga coming to an end?". <i>Chemical Physics Letters</i> , 2008, 462, 145-151.  | 1.2  | 35        |
| 34 | IS $HO_2$ A DETECTABLE INTERSTELLAR MOLECULE?. <i>Astrophysical Journal</i> , 2009, 697, 601-609.  | 1.6  | 35        |
| 35 | Sub-Doppler mid-infrared spectroscopy of molecular ions. <i>Chemical Physics Letters</i> , 2012, 551, 1-6.   | 1.2  | 34        |
| 36 | Cosmic-ray astrochemistry. <i>Chemical Society Reviews</i> , 2013, 42, 7763.   | 18.7 | 34        |

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|----|---|-----|-----------|
| 37 | Nuclear spin dependence of the reaction of $\text{H}_3^+$ with $\text{H}_2$ . II. Experimental measurements. <i>Journal of Chemical Physics</i> , 2011, 134, 194311.                              | 1.2 | 33        |
| 38 | Infrared Cavity Ringdown Spectroscopy of Jet-Cooled Polycyclic Aromatic Hydrocarbons. <i>ChemPhysChem</i> , 2004, 5, 321-326.   | 1.0 | 31        |
| 39 | Dissociative recombination of highly enriched para- $\text{H}_3^+$ . <i>Journal of Chemical Physics</i> , 2009, 130, 031101.  | 1.2 | 31        |
| 40 | Absorption-Line Survey of $\text{H}_3^+$ toward the Galactic Center Sources. III. Extent of Warm and Diffuse Clouds. <i>Publication of the Astronomical Society of Japan</i> , 2011, 63, L13-L17. | 1.0 | 31        |
| 41 | $\text{H}_3^+$ in dense and diffuse clouds. <i>Faraday Discussions</i> , 1998, 109, 267-280.  | 1.6 | 30        |
| 42 | A quantum cascade laser cw cavity ringdown spectrometer coupled to a supersonic expansion source. <i>Review of Scientific Instruments</i> , 2010, 81, 063102.                                     | 0.6 | 30        |
| 43 | Unusually Weak Diffuse Interstellar Bands toward HD 62542. <i>Astrophysical Journal</i> , 2002, 573, 670-677.   | 1.6 | 28        |
| 44 | CONSTRAINING THE ENVIRONMENT OF $\text{CH}_3^+$ FORMATION WITH $\text{CH}_3^+$ OBSERVATIONS. <i>Astrophysical Journal</i> , 2010, 711, 1338-1342.   | 1.6 | 28        |
| 45 | Nuclear spin dependence of the reaction of $\text{H}_3^+$ with $\text{H}_2$ . I. Kinetics and modeling. <i>Journal of Chemical Physics</i> , 2011, 134, 194310.                                   | 1.2 | 27        |
| 46 | High-precision and high-accuracy rovibrational spectroscopy of molecular ions. <i>Journal of Chemical Physics</i> , 2013, 139, 164201.  | 1.2 | 27        |
| 47 | Combination band spectroscopy of $\text{H}_3^+$ . <i>Journal of Chemical Physics</i> , 2000, 113, 3104-3110.  | 1.2 | 25        |
| 48 | Noise immune cavity enhanced optical heterodyne velocity modulation spectroscopy. <i>Optics Express</i> , 2011, 19, 24822.  | 1.7 | 25        |
| 49 | Broadly tunable mid-infrared noise-immune cavity-enhanced optical heterodyne molecular spectrometer. <i>Optics Letters</i> , 2012, 37, 4422.  | 1.7 | 24        |
| 50 | Communication: High precision sub-Doppler infrared spectroscopy of the $\text{HeH}^+$ ion. <i>Journal of Chemical Physics</i> , 2014, 141, 101101.  | 1.2 | 24        |
| 51 | THE LOW-TEMPERATURE NUCLEAR SPIN EQUILIBRIUM OF $\text{H}_3^+$ IN COLLISIONS WITH $\text{H}_2$ . <i>Astrophysical Journal</i> , 2012, 759, 21.  | 1.6 | 22        |
| 52 | A re-examination of the 4051 Å... band of $\text{C}_3$ using cavity ringdown spectroscopy of a supersonic plasma. <i>Chemical Physics Letters</i> , 2003, 374, 583-586.                           | 1.2 | 21        |
| 53 | Extending the Limits of Rotationally Resolved Absorption Spectroscopy: Pyrene. <i>Journal of Physical Chemistry Letters</i> , 2012, 3, 1985-1988.   | 2.1 | 21        |
| 54 | Laboratory spectroscopy of $\text{H}_3^+$ . <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2000, 358, 2385-2401.                                  | 1.6 | 19        |

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|----|---|-----|-----------|
| 55 | INTERSTELLAR METASTABLE HELIUM ABSORPTION AS A PROBE OF THE COSMIC-RAY IONIZATION RATE. <i>Astrophysical Journal</i> , 2009, 703, 2131-2137.<br>Search for H documentclass{aastex} usepackage{amsbsy} usepackage{amsfonts} usepackage{amssymb} usepackage{bm} usepackage{mathrsfs} usepackage{pifont} usepackage{stmaryrd} usepackage{textcomp} usepackage{portland,xspace} | 1.6 | 19        |
| 56 | usepackage{amsmath,amsxtra} usepackage[OT2,OT1]{fontenc} ewcommandcyr{enewcommandmdefault{wncy} enewcommandsfdefault{wncyss} enewcommandencodingdefault{OT2} ormalfont selectfont} DeclareTextFontCommand{extcyr}   | 1.6 | 17        |
| 57 | Diffuse Interstellar Bands Toward HD 62542. <i>Astrophysical Journal</i> , 2005, 625, 857-863.  | 1.6 | 16        |
| 58 | A Search for ortho-benzyne ( $C_6H_4$ ) in CRL 618. <i>Astrophysical Journal</i> , 2007, 671, L153-L156.  | 1.6 | 16        |
| 59 | DISSOCIATIVE RECOMBINATION OF VIBRATIONALLY COLD CH <sup>+</sup> <sub>3</sub> AND INTERSTELLAR IMPLICATIONS. <i>Astrophysical Journal</i> , 2012, 758, 55.  | 1.6 | 16        |
| 60 | Precision cavity enhanced velocity modulation spectroscopy. <i>Chemical Physics Letters</i> , 2010, 501, 1-5.   | 1.2 | 15        |
| 61 | HIGH PRECISION ROVIBRATIONAL SPECTROSCOPY OF OH <sup>+</sup> . <i>Astrophysical Journal</i> , 2016, 817, 138.   | 1.6 | 15        |
| 62 | Refractive index measurements of solid parahydrogen. <i>Optics Letters</i> , 2011, 36, 840.   | 1.7 | 14        |
| 63 | Ultra-sensitive high-precision spectroscopy of a fast molecular ion beam. <i>Journal of Chemical Physics</i> , 2011, 135, 224201.   | 1.2 | 14        |
| 64 | Mass spectrometry of atmospheric-pressure ball plasmoids. <i>International Journal of Mass Spectrometry</i> , 2015, 376, 39-45.   | 0.7 | 14        |
| 65 | A lifecycle cost analysis of transitioning to a fully-electrified, renewably powered, and carbon-neutral campus at the University of Dayton. <i>Sustainable Energy Technologies and Assessments</i> , 2020, 37, 100576.   | 1.7 | 14        |
| 66 | Inefficient Vibrational Cooling of C <sub>60</sub> in a Supersonic Expansion. , 2013, 2013, 1-10.   |     | 13        |
| 67 | High-resolution spectroscopy of the $\hat{1}/28$ band of methylene bromide using a quantum cascade laser. <i>Journal of Molecular Spectroscopy</i> , 2011, 266, 57-62.  | 0.4 | 12        |
| 68 | Storage ring measurements of the dissociative recombination of H <sub>3</sub> <sup>+</sup> . <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2012, 370, 5088-5100.   | 1.6 | 12        |
| 69 | Indirect Rotational Spectroscopy of HCO <sup>+</sup> . <i>Journal of Physical Chemistry A</i> , 2013, 117, 10034-10040.   | 1.1 | 12        |
| 70 | Cavity-enhanced velocity modulation spectroscopy. <i>Optics Letters</i> , 2010, 35, 1266.   | 1.7 | 10        |
| 71 | Additional bands of the Ar <sup>+</sup> D <sub>2</sub> O intramolecular bending mode observed using a quantum cascade laser. <i>Journal of Molecular Spectroscopy</i> , 2012, 282, 34-38.   | 0.4 | 10        |
| 72 | High-precision R-branch transition frequencies in the $\hat{1}/2$ fundamental band of H <sub>2</sub> <sup>+</sup> . <i>Journal of Molecular Spectroscopy</i> , 2015, 317, 71-73.  | 0.4 | 10        |

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|----|--|------|-----------|
| 73 | Extended sub-Doppler resolution spectroscopy of the $\hat{1}/2$ band of methane. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 215, 9-12.   | 1.1  | 10        |
| 74 | Stimulated Stokes downconversion in liquid and solid parahydrogen. Applied Physics Letters, 2003, 82, 1350-1352.   | 1.5  | 9         |
| 75 | Improving cavity-enhanced spectroscopy of molecular ions in the mid-infrared with up-conversion detection and Brewster-plate spoilers. Optics Express, 2017, 25, 3709.   | 1.7  | 9         |
| 76 | The ortho-para ratio of H <sub>3</sub> <sup>+</sup> in laboratory and astrophysical plasmas. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 5055-5065.              | 1.6  | 8         |
| 77 | Infrared emission spectroscopy of atmospheric-pressure ball plasmoids. Journal of Molecular Spectroscopy, 2016, 322, 1-8.  | 0.4  | 8         |
| 78 | Highly accurate experimentally determined energy levels of H <sub>3</sub> <sup>+</sup> . Journal of Chemical Physics, 2019, 150, 214303.   | 1.2  | 8         |
| 79 | Rotationally-Resolved Spectroscopy of the Donor Bending Mode of (D <sub>2</sub> O) <sub>2</sub> . Journal of Physical Chemistry A, 2013, 117, 13491-13499.   | 1.1  | 7         |
| 80 | Note: A modular and robust continuous supersonic expansion discharge source. Review of Scientific Instruments, 2010, 81, 086103.   | 0.6  | 6         |
| 81 | Communications: Development and characterization of a source of rotationally cold, enriched para-H <sub>3</sub> <sup>+</sup> . Journal of Chemical Physics, 2010, 132, 081103.   | 1.2  | 6         |
| 82 | Sub-Doppler rovibrational spectroscopy of the $\hat{1}/2$ fundamental band of D <sub>2</sub> H <sup>+</sup> . Journal of Molecular Spectroscopy, 2019, 355, 8-13.  | 0.4  | 6         |
| 83 | On the Symmetry and Degeneracy of H <sub>3</sub> <sup>+</sup> . Journal of Physical Chemistry A, 2013, 117, 9950-9958.   | 1.1  | 4         |
| 84 | Tilt-tuned etalon locking for tunable laser stabilization. Optics Letters, 2015, 40, 2696.   | 1.7  | 4         |
| 85 | Continuous-wave cavity ringdown spectroscopy of the Meinel system (2,1) band. Journal of Molecular Spectroscopy, 2008, 249, 14-22.   | 0.4  | 3         |
| 86 | Mid-infrared concentration-modulated noise-immune cavity-enhanced optical heterodyne molecular spectroscopy of a continuous supersonic expansion discharge source. Review of Scientific Instruments, 2016, 87, 063111. | 0.6  | 3         |
| 87 | Applications of NICE-OHMS to Molecular Spectroscopy. Springer Series in Optical Sciences, 2014, , 253-270.   | 0.5  | 3         |
| 88 | Recombination cool and fast. Nature, 2006, 440, 157-158.   | 13.7 | 2         |
| 89 | Rotationally-resolved spectroscopy of the $\hat{1}/2$ band of 1,3,5-trioxane. Journal of Molecular Spectroscopy, 2015, 317, 47-49.   | 0.4  | 2         |
| 90 | Electrical Properties of Reversed-Polarity Ball Plasmoid Discharges. Plasma, 2020, 3, 92-102.  | 0.7  | 2         |

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|----|--|-----|-----------|
| 91 | HIGHLY ACCURATE AND PRECISE INFRARED TRANSITION FREQUENCIES OF THE H <sub>3</sub> <sup>+</sup> CATION. , 2016, , .                               |     | 2         |
| 92 | SUB-DOPPLER SPECTROSCOPY OF THE $\hat{1}\frac{1}{2}2$ FUNDAMENTAL BAND AND FIRST HOT BAND OF THE H <sub>3</sub> <sup>+</sup> CATION. , 2018, , . |     | 2         |
| 93 | Optical and Infrared Observations of Diffuse Clouds. Proceedings of the International Astronomical Union, 2005, 1, 165.                          | 0.0 | 1         |
| 94 | Application of nuclear permutation inversion group theory to the benzenium ion. Journal of Molecular Spectroscopy, 2011, 268, 157-163.           | 0.4 | 1         |
| 95 | Tribute to Takeshi Oka. Journal of Physical Chemistry A, 2013, 117, 9305-9307.   | 1.1 | 1         |
| 96 | Quantitative velocity modulation spectroscopy. Journal of Chemical Physics, 2016, 144, 184201.   | 1.2 | 1         |
| 97 | MID-INFRARED NICE-OHMS SPECTROMETER FOR THE STUDY OF COLD MOLECULAR IONS. , 2014, , .  |     | 1         |
| 98 | The Properties of Near-Infrared Diffuse Interstellar Bands. Proceedings of the International Astronomical Union, 2013, 9, 100-102.               | 0.0 | 0         |