

# CURRICULUM VITAE

(updated 11/19/20)

David A. Neufeld

## Positions held:

- 1997 – present Professor, Department of Physics & Astronomy,  
The Johns Hopkins University
- 1993 – 97: Associate Professor, Department of Physics & Astronomy,  
The Johns Hopkins University
- 1989 – 93: Assistant Professor, Department of Physics & Astronomy,  
The Johns Hopkins University
- 1987 – 90: Visiting Postdoctoral, Astronomy Department,  
University of California, Berkeley

## Education:

- 1987: Ph.D. (Astronomy), Harvard University
- 1983: M.Sc. (Astronomy), Sussex University
- 1981: B.A. (Natural Sciences), Cambridge University

## Research interests:

Molecular astrophysics; submillimeter and far-infrared astronomy; astrophysical masers; interstellar medium; dark matter detection

- Co-I on Submillimeter Wave Astronomy Satellite (SWAS, past NASA SMEX Mission)
- Astronomy Co-I on HIFI (Herschel Space Observatory instrument)
- PI on multiple Infrared Space Observatory, Spitzer, Herschel and SOFIA GO programs
- Co-I on SOFIA/EXES science team (cross-dispersed echelle spectrometer)
- Co-I on GUSTO science team (balloon-borne CII mapping experiment)
- PI on HyGAL (SOFIA Legacy Program)

## Graduate Students and Postdoctoral Fellows supervised:

- Graduate students: Michael J. Kaufman (1/91 – 12/94), Wesley Chen (7/92 – 12/97)  
Saavik Ford (7/00 – 8/03), Yuan Yuan (7/06 – 5/12)
- Postdoctoral fellows: Steven Doty (2/95 – 5/97), Marco Spaans (10/95 – 9/97),  
Paule Sonnentrucker (9/04 – 5/10), Nick Indriolo (7/11 – 8/14)

## Prizes and Fellowships

- 1996: Bok Prize of Harvard University  
1993: National Science Foundation Young Investigator Award  
1981: Harkness Fellowship

## Teaching

*Radiative Processes in Astrophysics; Interstellar Medium and Fluid Mechanics; Molecular Astrophysics; Numerical methods for Physicists; Physics Seminar; Stars and Stellar Evolution* (graduate courses);

*Introduction to Astrophysics; Stars and the Universe; General Physics; Introduction to Frontier Physics; Special Relativity and Waves* (undergraduate courses)

## PUBLICATIONS

### In refereed journals

Total of 234 refereed papers with 11206 ADS citations / 15066 Google scholar citations:  
ADS H-index = 59 / Google scholar H-index = 68  
(Includes 61 first author papers with 3682 ADS citations: first author ADS H-index = 34)

Jacob, A. M., Menten, K. M., Wyrowski, F., Winkel, B., & **Neufeld, D. A.**, Extending the view of ArH<sup>+</sup> chemistry in diffuse clouds, *Astronomy and Astrophysics*, 643, A91 (2020).

Barr, A. G., Boogert, A., DeWitt, C. N., Montiel, E., Richter, M. J., Lacy, J. H., Neufeld, D. A., Indriolo, N., Pendleton, Y., Chiar, J., & Tielens, A. G. G. M., High-resolution Infrared Spectroscopy of Hot Molecular Gas in AFGL 2591 and AFGL 2136: Accretion in the Inner Regions of Disks around Massive Young Stellar Objects, *The Astrophysical Journal*, 900, 104 (2020).

Indriolo, N., **Neufeld, D. A.**, Barr, A. G., Boogert, A. C. A., DeWitt, C. N., Karska, A., Montiel, E. J., Richter, M. J., & Tielens, A. G. G. M., The H<sub>2</sub>O Spectrum of the Massive Protostar AFGL 2136 IRS 1 from 2 to 13  $\mu$ m at High Resolution: Probing the Circumstellar Disk, *The Astrophysical Journal*, 894, 107 (2020).

**Neufeld, D. A.**, Goto, M., Geballe, T. R., Güsten, R., Menten, K. M., & Wiesemeyer, H., Detection of Vibrational Emissions from the Helium Hydride Ion (HeH<sup>+</sup>) in the Planetary Nebula NGC 7027, *The Astrophysical Journal*, 894, 37 (2020).

Melnick, G. J., Tolls, V., Snell, R. L., Kaufman, M. J., Bergin, E. A., Goicoechea, J. R., Goldsmith, P. F., González-Alfonso, E., Hollenbach, D. J., Lis, D. C., & **Neufeld, D. A.**, Distribution of Water Vapor in Molecular Clouds. II, *The Astrophysical Journal*, 892, 22 (2020).

Bialy, S., **Neufeld, D.**, Wolfire, M., Sternberg, A., & Burkhart, B., Chemical Abundances in a Turbulent Medium-H<sub>2</sub>, OH<sup>+</sup>, H<sub>2</sub>O<sup>+</sup>, ArH<sup>+</sup>, *The Astrophysical Journal*, 885, 109 (2019).

Busch, M. P., Allen, R. J., Engelke, P. D., Hogg, D. E., **Neufeld, D. A.**, & Wolfire, M. G., The Structure of Dark Molecular Gas in the Galaxy. II. Physical State of “CO-dark” Gas in the Perseus Arm, *The Astrophysical Journal*, 883, 158 (2019).

- Neufeld, D. A.**, DeWitt, C., Lesaffre, P., Cabrit, S., Gusdorf, A., Tram, L. N., & Richter, M., SOFIA/EXES Observations of Warm H<sub>2</sub> at High Spectral Resolution: Witnessing Para-to-ortho Conversion behind a Molecular Shock Wave in HH7, *The Astrophysical Journal*, 878, L18 (2019).
- Neufeld, D. A.**, & Brach-Neufeld, D. J., Dark Matter That Interacts with Baryons: Experimental Limits on the Interaction Cross Section for 27 Atomic Nuclei, and Resultant Constraints on the Particle Properties, *The Astrophysical Journal*, 877, 8 (2019).
- Güsten, R., Wiesemeyer, H., **Neufeld, D.**, Menten, K. M., Graf, U. U., Jacobs, K., Klein, B., Ricken, O., Risacher, C., & Stutzki, J., Astrophysical detection of the helium hydride ion HeH<sup>+</sup>, *Nature*, 568, 357 (2019).
- Dagdigan, P. J., Klos, J., Wolfire, M., & **Neufeld, D. A.**, Calculation of the Rate of the C<sup>+</sup> + HF → CF<sup>+</sup> + H Reaction: Implications for Fluorine Chemistry in the Interstellar Medium, *The Astrophysical Journal*, 872, 203 (2019).
- Gerin, M., Liszt, H., **Neufeld, D.**, Godard, B., Sonnentrucker, P., Pety, J., & Roueff, E., Molecular ion abundances in the diffuse ISM: CF<sup>+</sup>, HCO<sup>+</sup>, HOC<sup>+</sup> and C<sub>3</sub>H<sup>+</sup>, *Astronomy and Astrophysics*, 622, A26 (2019).
- Goldsmith PF, Pineda JL, **Neufeld DA**, Wolfire MG, Risacher C, Simon R. Velocity-resolved [C II] Emission from Cold Diffuse Clouds in the Interstellar Medium. *Astrophysical Journal*. 2018; 856(2). DOI: 10.3847/1538-4357/aab34e.
- Barr AG, Boogert A, Dewitt CN, Montiel E, Richter MJ, Indriolo N, **Neufeld DA**, Pendleton Y, Chiar J, Dungee R, Tielens AGGM. Infrared Detection of Abundant CS in the Hot Core AFGL 2591 at High Spectral Resolution with SOFIA/EXES. *Astrophysical Journal Letters*. 2018; 868(1). DOI: 10.3847/2041-8213/aab23.
- SOFIA/EXES Spectroscopy of SO<sub>2</sub> Gas in the Massive Young Stellar Object MonR2 IRS3: Implications for the Sulfur Budget. *Astrophysical Journal Letters*. 2018; 868(1):L10.
- Neufeld DA**, Farrar GR, McKee CF. Dark Matter that Interacts with Baryons: Density Distribution within the Earth and New Constraints on the Interaction Cross-section. *Astrophysical Journal*. 2018; 866(2). DOI: 10.3847/1538-4357/aad6a4.
- Indriolo N, Tan JC, Boogert ACA, Dewitt CN, Montiel EJ, **Neufeld DA**, Richter MJ. High Spectral Resolution Observations toward Orion BN at 6 μm: No Evidence for Hot Water. *Astrophysical Journal Letters*. 2018; 865(2). DOI: 10.3847/2041-8213/aae1ff.
- Indriolo N, Bergin EA, Falgarone E, Godard B, Zwaan MA, **Neufeld DA**, Wolfire MG. Constraints on the Cosmic-Ray Ionization Rate in the z ~ 2.3 Lensed Galaxies SMM J2135-0102 and SDP 17b from Observations of OH<sup>+</sup> and H<sub>2</sub>O<sup>+</sup>. *Astrophysical Journal*. 2018; 865(2). DOI: 10.3847/1538-4357/aad7b3.
- Ryan Dungee, Adwin Boogert, Curtis N DeWitt, Edward Montiel, Matthew J Richter, Andrew G Barr, Geoffrey A Blake, Steven B Charnley, Nick Indriolo, Agata Karska, **Neufeld DA**, Rachel L Smith, Alexander GGM Tielens. High-resolution
- “The Cosmic-Ray Ionization Rate in the Galactic Disk, as Determined from Observations of Molecular Ions., **Neufeld, D. A.**, and Wolfire, M. G., *ApJ*, 845, 163 (2017)

- "SOFIA/GREAT Discovery of Terahertz Water Masers," **Neufeld, D. A.**, Melnick, G. J., Kaufman, M. J., Wiesemeyer, H., Gusten, R., Kraus, A., Menten, K. M., Ricken, O., Faure, A., *ApJ*, 843, 163 (2017)
- "Survey of Cold Water Lines in Protoplanetary Disks: Indications of Systematic Volatile Depletion," Du, F., and 13 colleagues, *ApJ*, 842, 98 (2017)
- "Hydrogen in diffuse molecular clouds in the Milky Way. Atomic column densities and molecular fraction along prominent lines of sight," Winkel, B., Wiesemeyer, H., Menten, K. M., Sato, M., Brunthaler, A., Wyrowski, F., **Neufeld, D.**, Gerin, M., Indriolo, N., *A&A*, 600, A2 (2017)
- "Search for Interstellar LiH in the Milky Way," **Neufeld, D. A.**, Goldsmith, P. F., Comito, C., Schmiedeke, A., *ApJ*, 837, 52 (2017)
- "Interstellar Hydrides," Gerin, M., **Neufeld, D. A.**, and Goicoechea, J. R., *ARAA*, 54, 181 (2016)
- "Herschel/HIFI Spectral Mapping of C<sup>+</sup>, CH<sup>+</sup>, and CH in Orion BN/KL: The Prevailing Role of Ultraviolet Irradiation in CH<sup>+</sup> Formation," Morris, P. W., Gupta, H., Nagy, Z., Pearson, J. C., Ossenkopf-Okada, V., Falgarone, E., Lis, D. C., Gerin, M., Melnick, G., **Neufeld, D. A.**, and Bergin, E. A., *ApJ*, 829, 15 (2016)
- "Evolution of Mass Outflow in Protostars," Watson, D. M., Calvet, N. P., Fischer, W. J., Forrest, W. J., Manoj, P., Megeath, S. T., Melnick, G. J., Najita, J., **Neufeld, D. A.**, Sheehan, P. D., Stutz, A. M., and Tobin, J. J., *ApJ*, 828, 52 (2016)
- "The Chemistry of Interstellar Argonium and Other Probes of the Molecular Fraction in Diffuse Clouds," **Neufeld, D. A.** and Wolfire, M. G., *ApJ*, 826, 183 (2016)
- "Herschel/HIFI observations of the circumstellar ammonia lines in IRC+10216," Schmidt, M. R., He, J. H., Szczerba, R., Bujarrabal, V., Alcolea, J., Cernicharo, J., Decin, L., Justtanont, K., Teyssier, D., Menten, K. M., **Neufeld, D. A.**, Olofsson, H., Planesas, P., Marston, A. P., Sobolev, A. M., de Koter, A., and Schoier, F. L., *A&A*, 592, A131 (2016)
- "Constraints on the H<sub>2</sub>O formation mechanism in the wind of carbon-rich AGB stars," Lombaert, R., Decin, L., Royer, P., de Koter, A., Cox, N. L. J., Gonzalez-Alfonso, E., **Neufeld, D.**, De Ridder, J., Agundez, M., Blommaert, J. A. D. L., Khouri, T., Groenewegen, M. A. T., Kerschbaum, F., Cernicharo, J., Vandenbussche, B., and Waelkens, C., *A&A*, 588, A124, (2016)
- "Far-infrared study of tracers of oxygen chemistry in diffuse clouds," Wiesemeyer, H., Gusten, R., Heyminck, S., Hubers, H. W., Menten, K. M., **Neufeld, D. A.**, Richter, H., Simon, R., Stutzki, J., Winkel, B., and Wyrowski, F., *A&A*, 585, A76, (2016)
- "Detection of extragalactic argonium, ArH<sup>+</sup>, toward PKS 1830-211," Muller, H. S. P., Muller, S., Schilke, P., Bergin, E. A., Black, J. H., Gerin, M., Lis, D. C., **Neufeld, D. A.**, & Suri, S., *A&A*, 582, L4 (2015)
- "Herschel Observations of Interstellar Chloronium. II. Detections toward G29.96-0.02, W49N, W51, and W3(OH), and Determinations of the Ortho-to-Para and 35Cl/37Cl Isotopic Ratios," **Neufeld, D. A.**, Black, J. H., Gerin, M., Goicoechea, J. R., Goldsmith, P. F., Gry, C., Gupta, H., Herbst, E., Indriolo, N., Lis, D., Menten, K. M., Monje, R., Mookerjee, B., Persson, C., Schilke, P., Sonnentrucker, P., & Wolfire, M. G., *ApJ*, 807, 54 (2015)
- "Widespread galactic CF<sup>+</sup> absorption: detection toward W49 with the Plateau de Bure Interferometer," Liszt, H. S., Guzman, V. V., Pety, J., Gerin, M., **Neufeld, D. A.**, & Gratier, P., *A&A*, 579, A12 (2015)

- "A Herschel/HIFI Legacy Survey of HF and H<sub>2</sub>O in the Galaxy: Probing Diffuse Molecular Cloud Chemistry,  
"Sonnentrucker, P., Wolfire, M., Neufeld, D. A., Flagey, N., Gerin, M., Goldsmith, P., Lis, D., &  
Monje, R., ApJ, 806, 49 (2015)
- "Sulphur-bearing molecules in diffuse molecular clouds: new results from SOFIA/GREAT and the IRAM 30  
m telescope," Neufeld, D. A., Godard, B., Gerin, M., Pineau des Forêts, G., Bernier, C., Falgarone,  
E., Graf, U. U., Güsten, R., Herbst, E., Lesaffre, P., Schilke, P., Sonnentrucker, P., & Wiesemeyer,  
H., A&A, 577, A49 (2015)
- "SOFIA/EXES Observations of Water Absorption in the Protostar AFGL 2591 at High Spectral Resolution,  
"Indriolo, N., Neufeld, D. A., DeWitt, C. N., Richter, M. J., Boogert, A. C. A., Harper, G. M., Jaffe, D.  
T., Kulas, K. R., McKelvey, M. E., Ryde, N., & Vacca, W., ApJ, 802, L14 (2015)
- "[O I] 63  $\mu$ m Jets in Class 0 Sources Detected By Herschel," Nisini, B., Santangelo, G., Giannini, T.,  
Antonucci, S., Cabrit, S., Codella, C., Davis, C. J., Eisloffel, J., Kristensen, L., Herczeg, G., Neufeld,  
D., & van Dishoeck, E. F., ApJ, 801, 121 (2015)
- "Herschel Survey of Galactic OH<sup>+</sup>, H<sub>2</sub>O<sup>+</sup>, and H<sub>3</sub>O<sup>+</sup>: Probing the Molecular Hydrogen Fraction and  
Cosmic-Ray Ionization Rate," Indriolo, N., Neufeld, D. A. et al., ApJ, 800, 40 (2015)
- "[C II] absorption and emission in the diffuse interstellar medium across the Galactic plane," Gerin, M., et  
al., A&A, 573, A30, (2015)
- "ALMA data suggest the presence of spiral structure in the inner wind of CW Leonis," Decin, L., Richards,  
A. M. S., Neufeld, D., Steffen, W., Melnick, G., & Lombaert, R., A&A, 574, A5 (2015)
- "Herschel Far-infrared Spectral-mapping of Orion BN/KL Outflows: Spatial Distribution of Excited CO, H<sub>2</sub>O,  
OH, O, and C<sup>+</sup> in Shocked Gas," Goicoechea, J. R., Chavarría, L., Cernicharo, J., Neufeld, D.  
A., Vavrek, R., Bergin, E. A., Cuadrado, S., Encrenaz, P., Etxaluze, M., Melnick, G. J., &  
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- "ALMA sub-mm maser and dust distribution of VY Canis Majoris," Richards, A.M. S., et al., A&A, 572, L9  
(2014)
- "Shockingly low water abundances in Herschel/PACS observations of low-mass protostars in Perseus,"  
Karska, A., et al., A&A, 572, A9 (2014)
- "Discovery of Time Variation of the Intensity of Molecular Lines in IRC+10216 in the Submillimeter and  
Far-Infrared Domains," Cernicharo, J., et al., ApJ, 796, L21 (2014)
- "Herschel HIFI Observations of O<sub>2</sub> toward Orion: Special Conditions for Shock Enhanced Emission," Chen,  
J. H., et al., ApJ, 793, 111 (2014)
- "First spectrally-resolved H<sub>2</sub> observations towards HH 54 . Low H<sub>2</sub>O abundance in shocks," Santangelo,  
G., et al., A&A, 569, L8 (2014)
- "Ubiquitous argonium (ArH<sup>+</sup>) in the diffuse interstellar medium: A molecular tracer of almost purely  
atomic gas," Schilke, P., **Neufeld, D. A.** et al., A&A, 566, A29 (2014)
- "Hydrogen Fluoride toward Luminous Nearby Galaxies: NGC 253 and NGC 4945," Monje, R. R., Lord, S.,  
Falgarone, E., Lis, D. C., **Neufeld, D. A.**, Phillips, T.G., Güsten, R., ApJ, 785, 22 (2014)

- "The Water Abundance behind Interstellar Shocks: Results from Herschel/PACS and Spitzer/IRS Observations of H<sub>2</sub>O, CO, and H<sub>2</sub>," **Neufeld, D. A.**, et al., ApJ, 781, 102 (2014)
- "Herschel\* Far-infrared Spectroscopy of the Galactic Center. Hot Molecular Gas: Shocks versus Radiation near Sgr A," Goicoechea J. R., et al., ApJ, 769, L13, (2013)
- "Herschel/HIFI Observations of a New Interstellar Water Maser: The 5<sub>32</sub> – 4<sub>41</sub> Transition at 620.701 GHz," **Neufeld D. A.**, Wu Y., Kraus A., Menten K. M., Tolls V., Melnick G. J., Nagy Z., ApJ, 769, 48, (2013)
- "BASECOL2012: A collisional database repository and web service within the Virtual Atomic and Molecular Data Centre (VAMDC)," Dubernet M.-L., et al., A&A, 553, A50, (2013)
- "Herschel/HIFI Search for H<sub>2</sub><sup>17</sup>O and H<sub>2</sub><sup>18</sup>O in IRC+10216: Constraints on Models for the Origin of Water Vapor," **Neufeld D. A.**, et al., ApJ, 767, L3, (2013)
- "Hydrogen Chloride in Diffuse Interstellar Clouds along the Line of Sight to W31C (G10.6-0.4)," Monje R. R., Lis D. C., Roueff E., Gerin M., De Luca M., **Neufeld D. A.**, Godard B., Phillips T. G., ApJ, 767, 81, (2013)
- "The Abundance, Ortho/Para Ratio, and Deuteration of Water in the High-mass Star-forming Region NGC 6334 I," Emprechtinger M., et al., ApJ, 765, 61, (2013)
- "Direct Determination of the HF/H<sub>2</sub> Abundance Ratio in Interstellar Gas," Indriolo N., **Neufeld D. A.**, Seifahrt A., Richter M. J., ApJ, 764, 188, (2013)
- "Herschel/PACS Spectroscopic Survey of Protostars in Orion: The Origin of Far-infrared CO Emission," Manoj P., et al., ApJ, 763, 83, (2013)
- "Herschel/HIFI observations of [C II] and [<sup>13</sup>CII] in photon-dominated regions," Ossenkopf V., Rollig M., **Neufeld D. A.**, Pilleri P., Lis D. C., Fuente A., van der Tak F. F. S., Bergin E., A&A, 550, A57, (2013)
- "Herschel Observations Reveal Anomalous Molecular Abundances toward the Galactic Center," Sonnentrucker P., Neufeld D. A., Gerin M., De Luca M., Indriolo N., Lis D. C., Goicoechea J. R., ApJ, 763, L19, (2013)
- "Water Absorption in Galactic Translucent Clouds: Conditions and History of the Gas Derived from Herschel/HIFI PRISMAS Observations," Flagey N., et al., ApJ, 762, 11, (2013)
- "Mapping water in protostellar outflows with Herschel. PACS and HIFI observations of L1448-C," Nisini B., et al., A&A, 549, A16, (2013)
- "Chemical Analysis of a Diffuse Cloud along a Line of Sight toward W51: Molecular Fraction and Cosmic-Ray Ionization Rate", Indriolo N., **Neufeld D. A.**, Gerin M., Geballe T. R., Black J. H., Menten K. M., Goicoechea J. R., ApJ, 758, 83 (2012)
- "H<sub>2</sub>O line mapping at high spatial and spectral resolution. Herschel observations of the VLA 1623 outflow", Bjerkerli P., et al., A&A, 546, A29 (2012)
- "Hydrogen Fluoride in High-mass Star-forming Regions", Emprechtinger M., Monje R. R., van der Tak F. F. S., van der Wiel M. H. D., Lis D. C., **Neufeld D.**, Phillips T. G., Ceccarelli C., ApJ, 756, 136 (2012)

- "Herschel/HIFI observations of red supergiants and yellow hypergiants. I. Molecular inventory", Teyssier D., et al., *A&A*, 545, A99 (2012)
- "Hydride spectroscopy of the diffuse interstellar medium: new clues on the gas fraction in molecular form and cosmic ray ionization rate in relation to  $H_3^+$ ", Gerin M., et al., *Royal Society of London Philosophical Transactions Series A*, 370, 5174, (2012)
- "The Chemistry of Interstellar  $OH^+$ ,  $H_2O^+$  and  $H_3O^+$ : Inferring the Cosmic-Ray Ionization Rates from Observations of Molecular Ions", Hollenbach D., Kaufman M. J., **Neufeld D.**, Wolfire M., Goicoechea J. R., *ApJ*, 754, 105 (2012)
- "Spitzer Observations of Shock-excited Hydrogen Deuteride in IC 443C, HH 7, and HH 54: Probing the Gas-phase Deuterium Abundance in the Dense Interstellar Medium", Yuan Y., **Neufeld D. A.**, Sonnentrucker P., Melnick G. J., Watson D. M., *ApJ*, 753, 126 (2012)
- "Herschel Search for  $O_2$  toward the Orion Bar", Melnick G. J., et al., *ApJ*, 752, 26 (2012)
- "Herschel/HIFI Discovery of  $HCl^+$  in the Interstellar Medium", De Luca M., et al., *ApJ*, 751, L37 (2012)
- "High-resolution absorption spectroscopy of the OH ground state line", Wiesemeyer H., Gusten R., Heyminck S., Jacobs K., Menten K. M., Neufeld D. A., Requena-Torres M. A., Stutzki J., *A&A*, 542, L7 (2012)
- "Discovery of interstellar mercapto radicals (SH) with the GREAT instrument on SOFIA", **Neufeld D. A.**, et al., *A&A*, 542, L6 (2012)
- "Collisional Excitation of Far-infrared Line Emissions from Warm Interstellar Carbon Monoxide (CO)", **Neufeld D. A.**, *ApJ*, 749, 125 (2012)
- "Comparative study of  $CH^+$  and  $SH^+$  absorption lines observed towards distant star-forming regions," Godard B., et al., *A&A*, 540, A87 (2012)
- "Herschel Observations of Interstellar Chloronium", **Neufeld D. A.**, et al., *ApJ*, 748, 37 (2012)
- "Herschel/HIFI observations of O-rich AGB stars: molecular inventory", Justtanont K., et al., *A&A*, 537, A144 (2012)
- "Herschel/HIFI observations of molecular emission in protoplanetary nebulae and young planetary nebulae", Bujarrabal V., et al., *A&A*, 537, A8 (2012)
- "Discovery of Hydrogen Fluoride in the Cloverleaf Quasar at  $z = 2.56$ ", Monje, R. R., Phillips, T. G., Peng, R., Lis, D. C., **Neufeld, D. A.**, Emprechtinger, M., *ApJ*, 742, L21 (2011)
- "Detection of the Water Reservoir in a Forming Planetary System", Hogerheijde, M. R., et al., *Sci*, 334, 338 (2011)
- "Discovery of Water Vapor in the High-redshift Quasar APM 08279+5255 at  $z = 3.91$ ", Lis, D. C., **Neufeld, D. A.**, Phillips, T. G., Gerin, M., Neri, R., *ApJ*, 738, L6 (2011)
- "Spitzer Spectral Line Mapping of Protostellar Outflows. III.  $H_2$  Emission in L1448, BHR71, and NGC2071", Giannini, T., Nisini, B., **Neufeld, D.**, Yuan, Y., Antonucci, S., Gusdorf, A., *ApJ*, 738, 80 (2011)

- "HIFI detection of hydrogen fluoride in the carbon star envelope IRC +10216, " Agundez, M., Cernicharo, J., Waters, L. B. F. M., Decin, L., Encrenaz, P., **Neufeld, D.**, Teyssier, D., Daniel, F., A&A, 533, L6 (2011)
- "Herschel Measurements of Molecular Oxygen in Orion, " Goldsmith, P. F., et al., ApJ, 737, 96 (2011)
- "Herschel/HIFI Observations of Hydrogen Fluoride Toward Sagittarius B2(M), " Monje, R. R., et al., ApJ, 734, L23 (2011)
- "Herschel observations of EXtra-Ordinary Sources (HEXOS): Methanol as a probe of physical conditions in Orion KL, " Wang, S., et al., A&A, 527, A95 (2011)
- "Water in Star-forming Regions with the Herschel Space Observatory (WISH). I. Overview of Key Program and First Results, " van Dishoeck, E. F., et al., PASP, 123, 138 (2011)
- "The Widespread Occurrence of Water Vapor in the Circumstellar Envelopes of Carbon-rich Asymptotic Giant Branch Stars: First Results from a Survey withHerschel/HIFI, " **Neufeld, D. A.**, et al., ApJ, 727, L29 (2011)
- "Herschel/HIFI Observations of IRC+10216: Water Vapor in the Inner Envelope of a Carbon-rich Asymptotic Giant Branch Star, " **Neufeld, D. A.**, et al., ApJ, 727, L28 (2011)
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- "Spitzer Observations of Supernova Remnants. II. Physical Conditions and Comparison with HH7 and HH54, " Yuan, Y., **Neufeld, D. A.**, ApJ, 726, 76 (2011)
- "Spitzer Spectral Line Mapping of Protostellar Outflows. II. H<sub>2</sub> Emission in L1157, " Nisini, B., Giannini, T., **Neufeld, D. A.**, Yuan, Y., Antonucci, S., Bergin, E. A., Melnick, G. J., ApJ, 724, 69 (2010)
- "Nitrogen hydrides in the cold envelope of IRAS 16293-2422, " Hily-Blant, P., et al., A&A, 521, L52 (2010)
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