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Professional Preparation

• Washington and Jefferson College	Chemistry	B.A. 1984
• University of North Carolina	Chemistry	Ph.D. 1989

Appointments

- Program Scientist/Manager, NASA Headquarters, Earth Science Division, May 2007-present
- Physicist, Smithsonian Astrophysical Observatory, September 1990–2009
- Affiliate, Harvard College Observatory, 1990-2007
- Post-doctoral appointment, University of North Carolina, 1989-1990

Scientific Activities

- FIRS-2 Atmospheric remote sensing research group, 1990-2009. (PI, 2003-2009)
- FIRST (Far Infrared Spectroscopy of the Troposphere) instrument and science team, 2001-2006.
- HITRAN molecular spectroscopy working group.
- NASA Earth Science Division Program Manager, Upper Atmosphere Research Program
- NASA HQ Program Scientist for the NASA EOS Aura, Orbiting Carbon Observatory (OCO-2 & OCO-3), CLARREO-Pathfinder satellite missions, OMPS-Limb, GeoCarb, numerous airborne mission (TC-4, GLOPAC, MACPEX, SEAC4RS, POSIDON, ATTREX, ACT-America, ACCLIP, DCOTTS), and GSFC DISC.
- Network for the Detection of Atmospheric Composition Change (NDACC) international steering group.
- WCRP SPARC Science Steering Group Ex Officio representative.
- Vienna Convention Ozone Research Managers co-chair.
- Montreal Protocol Scientific Assessment Scientific Steering Committee

Areas of expertise

- Remote sensing (both limb sounding and nadir sounding)
- Radiative transfer calculations
- Instrument design
- Extra-solar planet detection
- Molecular spectroscopy
- Stratospheric and upper tropospheric photochemistry and dynamics
- Molecular dynamics
- Atmospheric Composition and Climate Change
- NASA Science Program Management and satellite Program Scientist

Graduate and Postdoctoral Advisors

Roger Miller (University of North Carolina), Wesley Traub (Harvard-Smithsonian Center for Astrophysics)

Publications

1. The vibrational predissociation lifetime of the HF dimer upon exciting the "free-H" stretching vibration (Z. S. Huang, **K. W. Jucks** and R.E. Miller), J. Chem. Phys., 85, p. 3338, (1986).

2. The argon-hydrogen fluoride binary complex; An example of a long lived metastable system (Z. S. Huang, **K. W. Jucks** and R. E. Miller), J. Chem. Phys., 85, p. 6905, (1986).

3. The nitrogen-hydrogen fluoride dimer: Infrared spectroscopy and vibrational predissociation. (**K. W. Jucks,** Z. S. Huang and R. E. Miller), J. Chem. Phys., 86, p. 1098, (1987).

4. The structure of the carbon dioxide dimer from near infrared spectroscopy (**K. W. Jucks**, Z. S. Huang, D. Dayton, R. E. Miller, and W. J. Lafferty), J. Chem. Phys., 86, p. 4341, (1987).

5. The effect of vibrational state mixing on the predissociation lifetime of ν_1 excited OC-HF (**K. W. Jucks** and R. E. Miller), J. Chem. Phys., 86, p. 6637, (1987).

6. Infrared Stark spectroscopy of the hydrogen-HF binary complex (**K. W. Jucks** and R. E. Miller), J. Chem. Phys., 87, p. 5629, (1987).

7. The ν_1 vibrational fundamental of the cyanogen-HF binary complex (**K. W. Jucks** and R. E. Miller), Chem. Phys. Lett., 139, p. 201, (1987).

8. Structure and vibrational dynamics of the CO_2 dimer from the sub-Doppler infrared spectrum of the 2.7 micron Fermi diad (**K. W. Jucks**, Z. S. Huang, R. E. Miller, G. T. Fraser, A. S. Pine and W. J. Lafferty), J. Chem. Phys., 88, p. 2185, (1988).

9. Near infrared spectroscopic observation of the linear and cyclic isomers of the hydrogen cyanide trimer (**K. W. Jucks** and R. E. Miller), J. Chem. Phys., 88, p. 2196, (1988).

10. Infrared spectroscopy of the hydrogen cyanide dimer (**K. W. Jucks** and R. E. Miller), J. Chem. Phys., 88, p. 6095, (1988).

11. The intermolecular bending vibrations of the hydrogen cyanide dimer, (**K. W. Jucks** and R. E. Miller), Chem. Phys. Lett., 147, p. 137, (1988).

12. Sub-Doppler resolution infrared spectra of the isoelectronic pair: N_2-HCN and OC-HCN (**K. W. Jucks** and R. E. Miller) J. Chem. Phys., 89, p. 1262, (1989).

13. Photofragment angular distributions for HF dimer: Scalar J-J correlations in state-to state photodissociation (D. C. Dayton, **K. W. Jucks** and R. E. Mil ler). J. Chem. Phys., 89, p. 2631, (1989).

14. Vibrational predissociation of the acetylene-hydrogen cyanide complex: dependence on vibrational mode and molecular structure (P. A. Block, **K. W. Jucks**, L. G. Pedersen and R. E. Miller), Chem. Phys., 139, p. 15, (1989).

15. On the Use of O_2 Spin-Rotation Lines for Elevation Angle Calibration of Atmospheric Thermal Emission Spectra, (K.V. Chance, W.A. Traub, **K.W. Jucks**, and D.G. Johnson) International Journal of Infrared and Millimeter Waves 12, pp. 581-588, (1991).

16. Measurement of the Stratospheric Hydrogen Peroxide Concentration Profile Using Far-Infrared Thermal Emission Spectroscopy (K.V. Chance, D.G. Johnson, W.A. Traub, and **K.W. Jucks**), Geophysical Research Letters 18, pp. 1003-1006, (1991).

17. Upper Limit for Stratospheric HBr Using Far-Infrared Thermal Emission Spectroscopy (W.A. Traub, D.G. Johnson, **K.W. Jucks**, and K.V. Chance) Geophysical Research Letters, 19, pp. 1651-1654, (1992).

18. The Smithsonian Astrophysical Observatory Database SAO92 (K. Chance, **K.W. Jucks**, D.G. Johnson, and W.A. Traub), Journal of Quantitative Spectroscopy and Radiative Transfer, 52, pp. 447-457, (1994).

19. Comparison of Column Abundances from Three Infrared Spectrometers During AASE II (W.A. Traub, **K.W. Jucks**, D.G.Johnson, M.T. Coffey, W.G. Mankin, and G.C. Toon), Geophysical Research Letters, 21, pp. 2591-2594, (1994).

20. Chemical Change in the Arctic Vortex During AASE-II (W.A. Traub, **K.W. Jucks**, D.G. Johnson, and K.V. Chance), Geophysical Research Letters, 21, pp. 2595-2598, (1994).

21. The Smithsonian Stratospheric Far-Infrared Spectrometer and Data Reduction System (D.G. Johnson, **K.W. Jucks**, W.A. Traub, and K.V. Chance), Journal of Geophysical Research, 100, pp. 3091-3106, (1995).

22. Subsidence of the Arctic Stratosphere Determined from Thermal Emission of HF (W.A. Traub, **K.W. Jucks**, D.G. Johnson, and K.V. Chance), Journal of Geophysical Research, 100, pp. 11,261-11,267, (1995).

23. Estimating the Abundance of ClO from Simultaneous Remote Sensing Measurements of HO_2, OH, and HOCl (D.G. Johnson, W.A. Traub, K.V. Chance, **K.W. Jucks**, and R.A. Stachnik) Geophysical Research Letters, 22, pp. 1867-1871, (1995).

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25. Validation of hydrogen chloride measurements made by the Halogen Occultation Experiment from the UARS platform (J.M. Russell III, L.E. Deaver, M. Luo, J.H. Park, L.L. Gordley, A.F. Tuck, G.C. Toon, M.R. Gunson, W.A. Traub, D.G. Johnson, **K.W. Jucks**, D.G. Murcray, R. Zander, I.G. Nolt, and C.R. Webster) Journal of Geophysical Research, 101, pp. 10,151-10,162, (1996).

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27. Validation of hydrogen fluoride measurements made by the Halogen Occultation Experiment from the UARS platform (J.M. Russell III, L.E. Deaver, M. Luo, R.J. Cicerone, J.H. Park, L.L. Gordley, G.C. Toon, M.R. Gunson, W.A. Traub, D.G. Johnson, **K.W. Jucks**, R. Zander, and I.G. Nolt) Journal of Geophysical Research, 101, pp. 10,163-10,174, (1996).

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Camy-Peyret, L. Bonamy, and J.-M. Hartmann), Journal of Quantitative Spectroscopy and Radiative Transfer, 61, pp. 153-184 (1999).

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37. Observations of OH, HO_2, H_2O, and O_3 in the upper stratosphere: implications for HO_x photochemistry (K.W. Jucks, D.G. Johnson, **K.V. Chance**, W.A. Traub, J.J. Margitan, G.B. Osterman, R.J. Salawitch, and Y. Sasano), Geophysical Research Letters, 25, pp. 3935-3938, (1998).

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39. Stratospheric age spectra derived from observations of water vapor and methane, (Johnson, D. G., **K. W. Jucks**, W. A. Traub, K. V. Chance, G. C. Toon, J. M. Russell III, and M. P. McCormick) J. Geophys. Res., 104, 21,595-21,602, (1999).

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63. Spectrum of a Habitable World: Earthshine in the Near Infrared, (M.C. Turnbull, W.A. Traub, **K.W. Jucks**, N.J. Woolf, M.R. Meyer, N. Gorlova, M.F. Skrutskie, J.C. Wilson), Astrophysical Journal, 664, 551, (2006).

64. First light from the Far-Infrared Spectroscopy of the Troposphere (FIRST) instrument, (Martin G. Mlynczak, David G. Johnson, Harri Latvakoski, **Kenneth Jucks**, Mike Watson, Gail Bingham, David P. Kratz, Wesley A. Traub, Stanley J. Wellard, Charles R. Hyde), Geophysical Research Letters, 33, L07704, (2006).

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